From Tesla's Price Strategy to Reflects the Overall Industry Trends of Electric Vehicles in China

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Abstract. This essay explains and focuses on the decreasing price strategy Tesla has adopted in 2022 and 2023. The cost of lithium batteries has decrease in 2023. The demand for electric vehicles is still high, due to the global trend of lowering carbon footprint and the tax reduction policy in China. To increase sales, Tesla decided to decrease the selling price of Model 3 and Model Y, both designed for middle-level income customers. By analyzing the financial ratios, it is proved that the pricing strategy was successful, and Tesla could tolerate the failure if this strategy couldn't work out in the long run. The electric vehicle market in China is becoming saturated. There will be a price war in the future, and many brands might disappear because of this. Tesla should retain its brand independence and spend more on research and development to further increase its market share. From Tesla's Price Strategy to Reflects the Overall Industry Trends of Electric Vehicles in China.

Keywords: Tesla, China Electric vehicles, Pricing strategy.

1. Introduction

1.1. Background

As environmental and energy resources issues get more and more serious, the global electric vehicle market is flourishing. Despite the increased production cost of lithium due to the raw material and battery component soaring price inflation in 2022, plug-in vehicles still sell at an enormous number: 10.2 million worldwide [1]. The leading U.S.-American company, Tesla, is considered as the most valuable brand within the automotive sector worldwide in 2023 [2]. The country with largest electric vehicle market is China. China produces total amount of 3,543,000 electric vehicle in 2021 [3]. The nature of fast growing and the relying on 40% of battery supply chain are the main reason for Tesla to enter the market of China in 2014 [4]. Though a well-known brand, Tesla's move to China was not that success. This year, Tesla had already cut prices of Model 3 and Model Y cars in China by around 6% to 13.5% [5].

1.2. Related researches

Du and Li find out that Tesla's use of differentiation in its expansion into the Chinese market has made it stand out from the crowd of electric vehicle brands [6]. BYD has been Tesla's biggest competitor in the Chinese market, and in the post epidemic era, Tesla is trending back. Compared with BYD, Tesla has more advantages in technology. However, as a multinational company, its relative control over the Chinese market will inevitably be smaller than that of the local brand BYD. Jia had research about the impact of covid-19 on Tesla's yield [7]. Tesla's yield rate could experience short-term fluctuations, as indicated by the findings of the impulse response method. However, the long-term effects are expected to be relatively minimal. According to the ARCH-GARCH model, the volatility of Tesla is positively correlated with the COVID-19 outbreak in China, with heightened volatility in earnings corresponding to an increase in daily confirmed cases. Similarly, the COVID-19 epidemic overseas also exerts a positive influence on Tesla's volatility. According to Zhu's finding, there are two main reasons for Tesla's price cut [8]. One, Tesla has been three quarters of deliveries less than expected. Second, Tesla officially said that with the development of technology, the cost is going down, as the fundamental reason for the price cut. It is possible that the price reduction can increase Tesla's market share. For increasing sales, it is still an unknown. Although the price can be

used as an incentive for consumers, it will also keep consumers on the sidelines to see the possibility of future price cuts. The brand image will improve. At the same time, price cuts can promote competition and drive innovation. Zhang's research had research on Tesla's pricing strategies [9]. Tesla's main customers are the middle and upper class. This demographic has strong purchasing power. The previously developed loyal customers and brand awareness also allowed Tesla to go for price skimming strategy, which is making the price very high when the product was first launched to earn profit. Tesla's R&D costs are high, and this money can be reused for R&D. Although Tesla started with this pricing strategy, Tesla needed to go for lower prices as the local Chinese electric vehicle brands became more dominant. Zhang have constructed a game-theoretic model that argues that prices of Tesla's product are relatively inelastic. Tesla should adjust its price appropriately while ensuring its brand reputation.

1.3. Objectives

Though various of papers have already done analysis of Tesla's diverse strategies, no paper has discussed about the specific pricing strategy that Tesla adopt this year yet. Hence, this essay will focus on discussing the pricing strategy, specifically the decrease of selling price of Tesla. In analysis, financial performances of Tesla and some comparison within the industry will be examine. Then, pros and cons of the strategy will be analyzed. In industry development, the effect of Tesla's pricing on the electric vehicle industry in China and future development of the industry will be discussed.

2. Analysis

2.1. Financial analysis

The second quarter report that Tesla released on July 19 could provide some insight into whether it is a wise decision to decrease prices [10]. Based on this and other companies' reports, financial ratios have been constructed into a table below, as shown in Table 1.

Table 1. Financial ratios

	Tesla	BYD	Li Auto
Gross Profit Margin	18.74%	17%	21.76%
Net Profit Margin	10.81%	3.9%	8.06%
Return on Capital Employed	8.28%	-19.14%	4.10%
Current Ratio	1.60	0.72	1.77
Acid-test Ratio	1.07	1.77	1.65

For profitability ratios:

$$\text{Gross Profit Margin} = \text{Gross profit/Sales revenue} \quad (1)$$

$$\text{Net Profit Margin} = \text{Net profit/Sales revenue} \quad (2)$$

It can be indicated that for Tesla, every $100 of sales revenue generated a profit of 18.74% and a net profit of 10.81%. Compare this to their strongest competitor in China, BYD, in 2022 BYD's gross profit margin is 17%, and their net profit margin is only 3.9% [11]. For some reason, BYD has been stopping releasing financial reports since the end of 2022, so this comparison might not be that convincing, considering that BYD also decreases its price by about $2000 [12]. Compare this to another Chinese EV brand, Li Auto, whose gross profit margin is 21.76%, and the net profit margin is 8.06% [13]. Li Auto has a better gross profit margin, yet a lower net profit margin compared to Tesla. For Tesla to improve its gross profit margin, it could try to increase prices in its less competitive markets where the price elasticity of demand is smaller. They could adopt more aggressive and innovative promotion strategies that suit with Chinese market to increase sales. Next, we will be looking at the return on capital employed:

$$\text{Return On Capital Employed} = \text{Net profit/Capital employed} \quad (3)$$

This means that every $100 of equity of Tesla was used to generate 8.28% of the profit. Compare with BYD's performance in 2022, which is -19.14%, Tesla clearly stands out. With such a ratio, it is questionable of the ability that BYD to function effectively, since it has not used its capital to create goods and services and generated them into profit successfully. Li Auto's return on capital employed is 4.10%. From this, it could be seen that Tesla has operated its company quite effectively, which allows them to take the risk of decreasing prices. To examine the ability to tolerate the failure of decreasing price, more could be revealed by analyzing liquidity ratios:

$$\text{Current Ratio} = \text{Current Assets}/\text{Current Liabilities} \quad (4)$$

$$\text{Acid-test Ratio} = (\text{Current Assets}-\text{Stocks})/\text{Current Liabilities} \quad (5)$$

Incredibly, both liquidity ratios suit the recommended range of 1.5-2 and 1. Tesla has sufficient working capital to pay off for short-term debts of the business. Currently, Tesla has more current assets than current liabilities. Not only it allowed Tesla to repay its debt easily, but also give it a wider range tolerating the negative effect of revenue of decreasing price. BYD's current ratio is 0.72, the acid-test ratio is 0.49. Both ratios are not comparable to Tesla. Li Auto's current ratio is 1.77, the acid-test ratio is 1.65. Li Auto actually has a better debt management compared to Tesla. However, considering the huge investment cost of Tesla, this deficit can be compensated.

2.2. Strategy analysis

Specifically, Tesla only decreases the price of Model 3 and Model Y. These two models are "entry-level" models. Target customers are those in the middle class. Tesla has always been a premium brand in Chinese awareness. Granted, customers will act with an incentive of decreasing prices. Nevertheless, this might hurt Tesla's position within the luxury car industry where they and Chinese customers put themselves. As a result, sales might increase, but in the long run, the reputation of Tesla's brand and its image in China might get damaged. Smartly, by only decreasing the price of entry-level models, Tesla could remain its high-end market position and increase sales at the same time, as shown in Table 2. According to the BCG matrix of Tesla, both Model 3 and Model Y could be considered cash cows [14].

Table 2. BCG Matrix of Tesla

Stars	Question Marks
-Tesla Model 3 -Tesla Solar Panels	-Tesla Semi -Tesla Roadster -Tesla Energy
Cash Cow	Dogs
-Model 3: Top-selling electric car in the US with a market share of over 40% -Model Y: Market share of 21% in the small SUV segment in the US market -Both products generate significant revenue for Tesla, Lnc. -High-profit margins for both products -Low promotion and placement investments due to strong demand and innovative marketing strategies -Investments into supporting infrastructure, such as Tesla's supercharger network, have contributed to positive brand image and improved customer experience	-Tesla Semi -Tesla Solar Products -Tesla Energy Products

As cash cows, Model Y and Model 3 need to use harvesting strategies. Usually, investments are not injected, and the revenue resulting from it is used in the research and development of stars or question mark products. Decreasing prices could further increase the profitability of cash cows. To stable its position in the Chinese market, Tesla could adopt other strategies like product development, diversification, and market development. Instead, Tesla chooses to use price as a medium to achieve

market penetration, which actually is a pretty wise decision. No additional cost is spent with this method. Furthermore, the gigafactory located in Shanghai focuses mainly on producing these two models, further increasing the possibility of reaching economies of scale and hence minimizing the loss of decreasing selling prices.

In fact, Tesla also has incentives for customers to purchase its high-end model, Model S and Model X. From May 5 to September 30, once purchase one of these models, customers could enjoy free charges for three years [15]. In a city, the electric vehicle needs to be charged approximately once per week. Tesla's supercharger will cost at least 30yuan. Assuming that there are 50 weeks within a year, there will be 1500yuan, or about $206, saved. Such services will not only benefit customers by saving their money but also save their time when charging. Without a doubt, customer loyalty will increase, and hence customer acquisition costs will get decrease. Customer loyalty allowed them to further publicized Tesla within their social circle, which brings more upper-class customers.

In addition, from 14, August to 30, September, there will be a subsidy of 8000 yuan after purchasing Model 3 and purchasing official car insurance. Long-range and performance editions of Model 3 also get a cut in price again. If a customer purchases Model 3 or Model Y through a friend, they could earn a referral bonus. Again, this not only decreased the cost of advertising but also decreased customer acquisition costs. An insurance is nearly a necessity when purchasing car. This means that such complementary good will not be an additional cost for customers.

3. Industrial development

3.1. Spillover effects

As a worldwide leading brand of electric vehicles, Tesla's pricing strategy will affect businesses within the market in several ways. First, since decreasing selling prices will make Tesla's entry-level models more attractive to customers, other brands might follow this trend. Whether other brands are decreasing prices intentionally to be lower than others or not, a price war of electric vehicles in the Chinese market will likely be happening within a few months. Brands like XPENG and Nio have already followed this decreasing price trend. This behavior could be explained by the price leadership that Tesla has. For other brands, they would think that it is safer if they adopt a similar strategy to Tesla. Other brands just wish to let their models look more attractive to customers than Tesla. For brands like Tesla, they can tolerate the risk if this pricing strategy fails. For others, whether the increase in gross profit could compensate for the risk of a lower net profit is something worth considering. From the point of the society, this trend is certainly a great thing. Decreasing prices could encourage more purchases, and eventually, increased consumption could increase the aggregate demand and promote economic growth and development in China. From the point of customers, purchasing electric vehicles with a lower cost will increase consumer surplus. For the companies, however, they may try to lower the cost to fill the loss of a lower selling price, which even leads to a low-standard product.

3.2. Differentiation

Aside from price, electric vehicle brands will have to develop other unique selling points to survive and then thrive in this competitive market. The most important one must be technology. The invention of electric vehicles is to solve the urging energy problem that humans must overcome. In other words, if the efficiency of electric vehicles, which use little electricity and generate huge amounts of fuel for vehicles, can get a further increase, and that is exclusive to only one brand, that brand will stand out for sure. Luckily, Tesla has adequate capital for investing in research and development of new technology. Professor Michael Metzger, from the Dahn research group of Tesla, has said "I would say that's probably the best lithium-ion cell you can make today," [16]. By using more media exposure and outstanding brand awareness, Tesla could attract more relevant professionals to their team. Further developing their technology can eventually let Tesla dominate the industry. A problem

with new technology would be the cost. If Tesla could further achieve economies of scale and retain its price, then it would win this technology race for sure.

3.3. Merger and Acquisition

Eventually, some brands will not be able to differentiate themselves within the market. Such brands will get taken over by another brand. Published by the Chinese government, the tax reduction policy will stop taking effect by 2025 [17]. By then, the utility that customers gain from electric vehicles will decrease greatly. The net profit of many brands will even turn negative at that point. In fact, Nio has already experienced a net loss for several quarters. Some of the brands that are not attractive enough to get taken over might just face insolvency and then disappear. Some brands might consider a merger. A new brand might resolve with experience and a loyal customer base, it is possible that it will thrive. In the end, these processes will continue and the number of electric vehicle brands in China should not exceed five. Despite the benefits of merger and acquisition, for Tesla, it is better for them to stay independent. One main reason why Tesla is so attractive is due to its brand awareness. Its founder, Elon Musk, has such outstanding entrepreneurship that the whole world appreciates. Adopting such a strategy will dilute the essence of the brand and represent compliance with Elon Mask. These will damage the image of the brand.

4. Conclusion

This paper has analysed the pricing strategy of Tesla and the future prospects of electric vehicles in China. The pricing strategy of Tesla is effective, considering the increased financial ratios and the grouping strategy they have adopted. Soon, this market will get saturated at an incredible speed. China is the largest market for electric vehicles. As a foreign company, Tesla has already overcome the biggest problem: stabilizing their market share. To enlarge it, Tesla should keep injecting new blood into their technologies and retain the independence of their brand. Then, Tesla could dominate the market, both in the middle class and the rich class.

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