

A Review of Factors Affecting Tesla's Profitability

Mengzhuo Shi^{1, a, †}, Yining Zhang^{2, *, †}, Chenhui Zhu^{3, b, †}

¹Xi'an Jiaotong-liverpool University Suzhou, China

²University College London London, United Kingdom, China

³XiaMen University Tan Kah Kee College Xiamen, China

*Corresponding author: ucbqhbs@ucl.ac.uk, ashi20@student.xjtlu.edu.cn,

swe18071@stuxujc.com

†These authors contributed equally.

Abstract. In recent years, the rapid development of the electric vehicle industry has attracted the attention of the majority of scholars. To better improve the development efficiency of enterprises in the electric vehicle industry and promote the healthy development of the market, this paper takes Tesla as the research object, makes a detailed analysis on the factors affecting the profitability of Tesla enterprises, and combs the relevant research literature on the electric vehicle industry. It is found that the factors affecting Tesla's profits can be roughly divided into internal and external parts. Among them, internal factors include leadership and innovation model, global market, goods and their prices, and credit and direct sales. External factors include the government and its policies, customer intentions, environmental factors and the number of charging stations. Finally, this paper believes that the company's leadership, labor force, policy, electric vehicle sales, and other factors greatly impact Tesla's revenue. The existing research results have made great contributions to this experiment and show that Tesla is rising steadily. What Tesla needs to do is continue to maintain its advantages and improve some conditions that are not conducive to the company's development, such as the lack of charging piles in some areas.

Keywords: Tesla; profitability; review; factors.

1. Introduction

1.1 Research Background

An American electric vehicle and energy company, Tesla Inc produces and sells electric vehicles, solar panels, and energy storage equipment. Headquartered in Palo Alto, it was co-founded by Martin Eberhard and Mark Tapperin on July 1, 2003. The founder named the company "Tesla Motors" to commemorate physicist Nikola Tesla [1]. In 2004, Elon Musk entered the company and led round financing. Tesla's first automotive product, the roadster, was released in 2008 as a two-door sports car. ChinaIRN Official Website points out that, in recent years, Tesla has become the biggest electric car manufacturer and introduce a wide range of products, including models, model x, model 3, etc. In 2016, Tesla's total revenue exceeded the US \$7 billion, and China's revenue accounted for about 15%. Among them, Tesla's sales in the United States doubled to \$4.2 billion. More than 97% of the revenue came from the automotive industry, and the rest came from energy production and storage [2]. The main reason for researching Tesla's sale volume is that electric vehicles are seen on the road more and more frequently. The significance of protecting the environment by reducing the use of vehicles that use oil is paid greater attention than ever before. The exhaust from electric vehicles is less damaged comparing with that from oil vehicles. So, it is definitely a predictable trend that electric vehicles will be the main vehicle used in the future. This paper will focus on the factors that may influence this industry. Tesla is a quite big and successful electronic car manufacturer company in the world. As Tesla's products are sold worldwide, the data of Tesla can be seen as a representative company.

1.2 Research Motivation and Necessity

Many studies use financial methods and qualitative market analysis for Tesla's operations. For example, Oliver (2020) uses financial ratios, Altman's Z-score and vertical analysis to conclude that Tesla is currently in a bad financial position in recent years compared to an established manufacturer [3]. Similarly, Mehta and Bhavani (2018) point out that although it made a good gross profit in absolute value, Tesla never made a full year profit due to high expense [4]. From qualitative market analysis, Tesla is poised for explosive market growth; it is uniquely positioned to capitalize upon this growth opportunity. Tesla's current and future growth is mainly dependent on the 'new technology'-based approach to marketing management (Myles et al. 2018) [5]. While many previous studies give a full analysis of the financial position and market position of Tesla, few studies discuss factors divided by internals and externals. Through the combination of previous findings, this paper will introduce external and internal factors affecting Tesla's profitability.

1.3 Paper Organization

This paper is divided into four parts: the first part is about the introduction. This part contains the background, motivation and original purpose to do this research. In the second part, this paper introduces both internal and external factors affecting Tesla's profitability. Internal factors include leadership and business model, global market, product and price, and regulatory credit and direct sales. External factors include government and policy, customer's interest, and environment and charging stations. Finally, after fully discussing the above factors, this paper concludes key findings, research significance and limitations, and a reference list is shown at the end of this paper.

2. Literature Review

By combing the research literature on the factors affecting Tesla's corporate profitability, it is found that the current research is mainly reflected in two aspects: internal factors and external factors. Among them, internal factors include leadership and innovation model, global market, goods and their prices, and credit and direct sales. External factors include government and its policies, customer intentions, environmental factors, etc.

Table 1. Classification of Factors Affecting Tesla's Profitability

<i>Internal Factors</i>	<i>External Factors</i>
Leadership and innovative business model	Government and Policy
Global market	Customer's interest
Product and price	Environment and Charging stations
Regulatory credit and Direct sales	

2.1 Internal factors affecting Tesla's profitability

2.1.1 Leadership and innovative business model

Leadership and strategy innovation always determines the development and direction of a company. Cody (2019) uses a wide range of management methods, including Porter's Five Forces, SWOT Analysis, and PEST Analysis, to find out profitability factors. He believes that Tesla put so much effort, and recommends replacing Elon Musk, CEO of Tesla since Musk is constantly working on a strategy for Tesla but has little oversight on him, which has caused the company issues in the past and to reduce the reduce research and development projects to only those that are the most sensible for the company to be investing in [6]. YiFei (2020) also points out that leadership is an

important factor in determining Tesla's success [7]. Maverick (2020) comprehensively introduces the leadership team of Tesla. Combining those kinds of research may make it easier to pick a suitable leader than Elon Musk [8]. While the company's innovative business model represents an existential threat to the auto industry as a whole, the software is a big part of Tesla's advantage. Tesla's speed in innovation in the market for high-end vehicles is more like a Google or an Amazon than an automaker (Shipley, 2020) [9]. Four things can prove it: first, it develops cars as it would a software product; second, it simplifies the buying process, putting the consumer in control; third, It leverages its prowess in battery technology to minimize the total cost of ownership over the vehicle's lifetime; forth, It attaches itself to the predominant market trend of the day — going green to reduce global warming (Shipley, 2020) [9]. Sebastian (2019) also believes Tesla's strategy contributes to the success of Tesla [10]. Kristina (2021) directly points out three key factors that make Tesla's business model different: Tesla's business model is based on direct sales and service, not franchised dealerships; Tesla's business model pays particular attention to rolling out charging stations. That may be the biggest obstacle to the mass adoption of electric vehicles, and Tesla has stretched the business model to encompass energy storage systems for homes and businesses [11].

2.1.2 Global market

John (2021) suggests that even if this is the second year, its delivery volume more or less met Tesla's stretch goal. "First a simple verbal overview of Tesla's approximate global market share [12]. In 2020, a flat year for the industry overall, and an up year for Tesla, the company's market share is roughly 0.8%. Or a little less than 1% of the total automobiles produced on Earth last year. We simply divided Tesla's half-million vehicles into the approximately 62 million Statista says were produced. Another way to look at it is that Tesla made about 1/124th of the automobiles" (John, 2021) [12]. Clearly, the Global market is a very important part of Tesla's business. Elon Musk, CEO of Tesla, said at the profit conference call in the first quarter of 2013 that as more cars are sold overseas, the emission credit line will decline in 2013. He promised that by the fourth quarter, Tesla would rely solely on its auto business for profit (Mark, 2013) [13]. The market of electronic cars is still in its growth phase, and Tesla needs to further expand the international market and develop the international market as soon as possible (Yifei, 2020) [7]. Tesla should first pay attention to the Chinese and European markets and establish a complete sales system and factories in this region (Cody, 2019) [6]. Although in late December 2018 stated that Tesla Inc has created a micro-monopoly in some markets, nowadays, one of the biggest challenges of Tesla is to maintain the electric vehicle (EV) market they have created (Gupta, 2020) [14].

2.1.3 Product and price

The biggest highlight of Tesla's electric cars is their technological leadership. Tesla's marketing method is different from the traditional mass marketing and mass production, and its "new technology" marketing management method and unique advantages of explosive growth opportunities in the battery electric vehicle industry are the core of Tesla's current and future development (Xianjun et al., 2019) [15]. Yifei (2020) also points out that continuing cultivation of technology is the main reason for Tesla's success. Tesla cooperated with Panasonic to deploy NCA battery technology and made continuous progress in battery technology, cooling, and cruising range [7]. In designing a successful China market entry, market entrants need to rethink and redesign their products to take full advantage of the possibilities of new technologies. That is what Tesla did with their product (Tiwari, 2017) [16]. They set few goals as expanding its share in the world's largest electric vehicle market when entering the Chinese market. Just because of those clear innovation technology makes them successful in China (Tiwari, 2017) [16]. In addition to its technical advantages, reasonable product prices also determine Tesla's profits. Shawn (2017) suggests that If the traditional manufacturers cut prices to win market share, it may force Tesla to lower prices, disrupting these forecasts. In addition, Tesla will need to invest more in cheaper mass market vehicles to approach this output. Falling means losing prestige. This may hammer Tesla's huge profits to achieve the ark target [17]. Compared with its competitors, Tesla's profits fluctuate much more. Tesla

is a growing company that tries to enter the mass market by providing a more reasonable price. Therefore, Tesla is almost unprofitable every year. However, since 2017, Tesla's interest rate began to rise gradually and reached the best level (-4.55%) in 2018 (Petro, 2019) [18].

2.1.4 Regulatory credit and Direct sales

Tesla's credit business is also the main source of Tesla's revenue when electric vehicles have not yet reached sufficient profitability. During 2019 and 2020, Tesla has accumulated a profit of \$699 million, which is the longest continuous time in the black market. Michael (2020) points out that regulatory credit is the reason to keep Tesla's bottom line in positive areas. However, its main business, producing and selling electric vehicles, is still a money loser [19]. In the first nine months of 2020, Tesla sold nearly \$1.2 billion of credits, compared with \$594 million in 2019. Tesla insists that its financial position will continue to improve as sales increase. The carmaker noted at the end of October 2020 that revenue rose 39% year-on-year, mainly due to increased vehicle delivery. Tesla delivered a record of about 140,000 vehicles worldwide in the quarter, bringing the number so far this year to 312, 000. Robert W. Baird analyst Ben Carlo raised the price target of Tesla stock at the end of October 2020. In his note, he increased sales and the company's potential to reduce costs and internal battery technology announced last month (Michael, 2020) [19]. Tesla's sales channel is also a factor in determining tesla's profit growth. Tesla reduces the trouble of dealing with dealers by selling directly to customers. Therefore, for customers, reducing trouble means increasing purchase intention (Sharma, 2016) [20]. However, for Tesla, the risk of poor sales and poor service of distributors will be minimized. At the same time, it provides customers with a variety of service experiences. Tesla's "service +", "Tesla Rangers", and "booster station" provide its customers with free charging and home service options. The connectivity feature also provides online service options (Sharma, 2016) [20].

2.2 External Factors Affecting Tesla's Profitability

2.2.1 Government and Policy

In a country with huge economic control, government relations are also important, and Tesla's technology is exactly consistent with the government's priorities. Co-founder Martin Eberhard said Tesla has begun to fight climate change. The most important thing in the climate war is China (Scott, 2016) [21]. China is the world's largest emitter of greenhouse gases and is promoting electric vehicles unprecedentedly: in 2016, the sales of electric and plug-in hybrid vehicles in China increased by 50%, reaching 507,000, more than three times that of the United States (Scott, 2016) [21]. Based on the lowest price of all Tesla models (35000 USD), it is the US \$1.75 billion. Government regulation of carbon dioxide emissions has stimulated the purchase of hybrid electric vehicles. Some governments not only limit the carbon dioxide emission of vehicles (Wills, 2014) [22] but also introduce policies such as "tax reduction", "low interest rate financing", and "cash rebate" to promote the development and manufacturing of new energy vehicles. Based on the changes of consumers and the government's incentives for fuel economy solutions, "hybrid electric vehicle" was introduced into the North American market in the mid-1990s, becoming a hot topic and gaining wide attention. In the past decade, the market for hybrid electric vehicles has grown rapidly (McPeak and Guo, 2014) [23].

2.2.2 Customer's interest

The recent shortage of oil derivatives and natural gas has led to rising oil prices and concerns about pollution. As a result, electronic cars have come into the public's view at this time. As a result, interest in electronic cars has increased significantly. Therefore, the electronic automobile industry began to recover gradually. Tesla began to enter this market at this time (Gafarov, 2019) [24]. Jui-Che and Yang (2019) give three important factors that affect customers' purchase of electronic cars: 1. In terms of behavioral intention: Consumers' control over the resources required to purchase electric vehicles has the highest influence on their behavioral intention, while consultation opinions from consumers' surroundings also significantly affect their behavioral intention to purchase electric vehicles. In addition, consumers' environmental awareness and acceptance of technology products will also influence their behavioral intention. 2. In terms of attitude toward behavior: When consumers believe

that electric vehicles are more beneficial at the individual, environmental or national level, or they believe that the usage of electric vehicles is simpler and more convenient, they will show a more positive attitude towards the purchase of electric vehicles. 3. In terms of regulations: The opinions of consumers' family members, friends, colleagues or supervisors do not significantly affect the attitude or behavior of consumers regarding electric vehicle purchase. The key factors influencing consumers' purchase of electric vehicles apply to the design and development of electric vehicles that better suit consumer demands and serve as a theoretical basis for the popularization of electric vehicles and provide a reference for consumers' choice and purchase [25]. Therefore, Tesla needs to consider increasing the publicity of electric vehicles and launch more attractive battery and charging schemes to attract consumers and promote the sustainable development of the automobile industry.

2.2.3 Environment and Charging stations

Global climate change and shortages are also key factors driving the growth of electronic vehicles sales. Every car burning fossil fuels produces an average of 20 pounds of carbon dioxide a day, in other words, 6,000 tons a year. Research shows that by 2100, the concentration of carbon dioxide in the atmosphere will be twice that of the past 800,000 years. However, the recent increase in carbon dioxide concentration is directly related to anthropogenic emissions. In other words, to benefit the organization and the earth immeasurably, Tesla's electric vehicles will replace a large number of vehicles burning fossil fuels. According to statistics, Uber has a 48% market share. If Tesla can occupy 5% of the market share, its sales will increase by 50,000 vehicles (Ayala, 2016) [26]. Eastern Daylight Time (2021) briefly introduces some problems faced by the electric vehicle market today. Things like growing demand for low emission commuting and governments supporting long range, zero emission vehicles through subsidies & tax rebates have compelled the manufacturers to provide electric vehicles around the world, has led to a growing demand for electric vehicles in the market. However, there also exist some problems like the low presence of EV charging stations and hydrogen fuel stations, higher costs involved in initial investments, and performance constraints that could hamper the growth of the global electric vehicle market [27].

3. Conclusion

3.1 Main Findings

The initial findings of the factors that would influence the sales volume of Tesla are as below, the leaders of the company may make a huge influence as they are the person who decides the strategy of the company, so it would be better if Tesla picks a right choice of the leader. Additionally, it can be obviously seen that the labor force is also related. As it connects to the car's production, with more workers and a cheaper labor force, Tesla's income would grow much higher. Besides, policy, number of charging stations, software and innovation related products would make the result different. Those things can impact consumers' intentions, and external factors as those would also greatly affect a company's sale volume.

In addition to the sales of electric vehicles, credit is an important factor to keep Tesla profitable in the early stage of its development. In the early days of Tesla, most of Tesla's revenue came from credit. Meanwhile, improving the attraction to customers is one of the essential factors to improve sales. Tesla has taken many measures to increase customer interest in it. The first is to develop more innovative models, such as "cybertruck" and new sports cars. Moreover, direct sales provide convenience and lower purchase cost to customers and reduce the company's sales cost. In addition, Tesla also attracts more customers by providing customers with a service experience. Another factor in increasing sales is to open up the market. When Tesla expands its market to all over the world, its sales and profits will increase. At the same time, relying on its new energy technology, Tesla has received strong support from the government while protecting the environment. When the government proposed policies to limit vehicle emissions, Tesla's sales did not decrease unlike most fuel vehicles. Instead, a large number of customers who responded positively to reduce pollution

chose to buy Tesla's electric vehicles. At the same time, to encourage Tesla's environmentally friendly new energy vehicles, the government helped Tesla such as reducing taxes, reducing financing interest rates and cash rebates. This will reduce Tesla's production costs and increase its profits.

3.2 Research Significance

Under today's circumstance that electric vehicles are gradually becoming the most popular traffic means, it's becoming the current hot topic. Many investors and enterprises want to enter this industry one after another. However, what should they focus on to be a successful company becomes the main question in the long run. EV can be defined as an emerging industry that people don't really have many experiences about, and this is why people need to learn from and imitate this industry through a successful case. While Tesla is a well-known successful company in this industry and in the next few years, there is a faint trend to become a leader. The company's successful experience is by no means accidental. Therefore, take Tesla as our research project is quite reliable, and the result would also be persuasive. This paper looks forward to being a guide for companies who plan to enter the EV market to grow a stronger business.

3.3 Future Studies

We aim to add some databases to this research about our group's future plan to perfect this paper. Our group decided to search the data of Tesla's sale volume of 2020 through Tesla's 10-K forms and some other resources. Then use tools such as Excel to make a regression model find out what factors have a quantitative relationship with Tesla's sales volume. This way would increase the comprehensiveness of the paper and make the results more convincing. In 2020, the whole world will suffer from coronavirus. This illness swept over the world, and nearly all the industry faced collapse. However, all the literature this paper refers to didn't introduce the influence of such a big event. This kind of data definitely should be collected. Besides, this paper mainly focuses on what other researchers did, and few numeric data are considered. So, lack of some numeric evidence is definitely our limitation.

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