Study of the Transition in Tesla's Pricing Strategy and the Challenges to Profit Margin: An Exploration of Dynamic Equilibrium

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Abstract. This research delves into an in-depth exploration of how Tesla strives to strike a balance between adjusting its pricing strategy and maintaining favorable profit margins. Tesla's shifts in pricing strategy have far-reaching implications on the global electric vehicle market. Through a case study approach, the authors dissect how Tesla navigates the trade-offs between price adjustments and profit margin retention, encompassing intricate factors such as cost control, market demand, competitive landscape, and consumer psychology. This study offers a novel perspective for comprehending Tesla's business model, holding practical significance for other electric vehicle manufacturers and investors assessing Tesla's profitability and investment worth.

Keywords: Tesla, Dynamic equilibrium, Profit margin challenge, New energy vehicles, Investment value assessment.

1. Introduction

1.1. Research Background and Significance

Currently, the global market for new energy vehicles is experiencing rapid growth, driven by factors such as government policy support, heightened environmental awareness, technological advancements, and reductions in battery costs. However, the new energy vehicle industry still confronts several significant challenges, including insufficient charging infrastructure on a global scale, limitations in battery technology and cost, as well as issues related to market acceptance. These factors collectively impede the widespread adoption of electric vehicles.

As a frontrunner in the global electric vehicle market, Tesla has secured market share through innovative product design, advanced battery technology, and a distinctive direct sales model. Nevertheless, Tesla faces its own set of challenges. With more automotive manufacturers entering the electric vehicle market, competition pressure on Tesla is intensifying. Supply chain issues, encompassing battery supply, raw material sourcing, production capacity, etc., might impact its product manufacturing and delivery. Furthermore, Tesla's operations are subject to regulations and policies of various countries, including changes in subsidy policies and rigorous enforcement of environmental regulations, all of which could influence Tesla's business landscape. Finally, despite achieving consecutive quarters of profitability, Tesla's financial situation still carries certain risks, including substantial research and development expenditures, as well as extensive capital outlay.

In conclusion, the growth of the electric vehicle market is undeniable, propelled by diverse factors, yet challenges persist in terms of infrastructure, technology, and market dynamics. Tesla's prominent position in this landscape is coupled with competitive, regulatory, and financial challenges that warrant continuous strategic adaptation.

1.2. Literature Review

Liu Yu focuses on utilizing the Wei-Zhu Six Elements Model to analyze Tesla Motors' business model, encompassing positioning, business systems, profit models, key resources and capabilities, cash flow structure, and corporate value analysis. This aids the author in comprehending Tesla's business model and strategy, elucidating how the company achieves success in the competitive electric vehicle market [1]. Liang Shuang initially employs the PEST analysis method, focusing on

political, economic, social, and technological factors, to depict the development status of the new energy vehicle industry. Subsequently, utilizing the SWOT analysis approach, the industry's strengths, weaknesses, opportunities, and challenges are examined. Finally, using Tesla's new energy vehicle business as an example, the financial indicators of the company's recent five years are employed to further analyze Tesla's sales performance in the Chinese market. Through detailed calculation and analysis, the states indicated by relevant economic indicators suggest that the new energy vehicle industry aligns with investment expectations, thereby assessing the feasibility of investing in the new energy vehicle sector [2]. Chen Han and colleagues illustrate the issue of suboptimal profitability that arose for Tesla in 2019 following a roller-coaster-like series of price adjustments. This allows the author to gain deeper insights into how price adjustments can lead to profitability challenges [3]. Qian Zhichao and Bao Xiaoyun, based on the domestic macroeconomic and policy environment, employ marketing theories to meticulously analyze the marketing environment of Tesla Motors Limited, ranging from target markets to market positioning. Ultimately, they devise Tesla's marketing mix strategy, encompassing product, pricing, promotion, and distribution [4].

1.3. Research Contents and Framework

This paper focuses on Tesla's pricing model with the aim of analyzing issues within its pricing strategy and proposing solutions. The article is structured into five sections: In the first section, the research background is introduced, encompassing an overview of the new energy vehicle market, Tesla's market position, and the significance of pricing strategy. The second section provides a comprehensive depiction of Tesla's case, including its product line, sales model, pricing strategy, and global market performance. The third section delves deep into the issues within Tesla's pricing strategy, exploring aspects such as market competition, consumer acceptance, and production costs. In the fourth section, based on the analysis of problems, strategies for addressing Tesla's pricing issues are proposed, including product differentiation, adjustments to pricing strategies, and enhancing production efficiency. The fifth section concludes the paper by summarizing the findings and proposed strategies, discussing their implications for Tesla and the new energy vehicle industry, and suggesting potential avenues for future research.

2. Case Description

In the course of researching the global electric vehicle market, the author took note of Tesla's significant price adjustments on May 2, 2023, across key markets such as China, the United States, Japan, and Canada. This move, coming after several rounds of price reductions, evidently signifies a profound shift in Tesla's pricing strategy. Tesla appears to be transitioning toward a more dynamic pricing model that aims to flexibly adapt according to market conditions and sales performance. In contrast to the trajectory of low volume and high profit, the current pursuit for Tesla seems to align with a 'thin-margin, high-volume' approach. The implementation of this strategy has indeed led to increased sales figures, but it has concurrently brought to light certain challenges within Tesla's business model and pricing strategy.

Following an analysis of Tesla's second-quarter financial report released on July 20, 2023, the author found that despite achieving historical records in aspects such as production, deliveries, and revenue (as depicted in Figure 1), there has been a notable decline in its gross profit margin. While the revenue from the automotive segment surged by 46% from the same period last year, growing from $14.602 billion to $21.268 billion, the gross profit margin decreased to 18.2%, marking the lowest level in sixteen quarters [5].

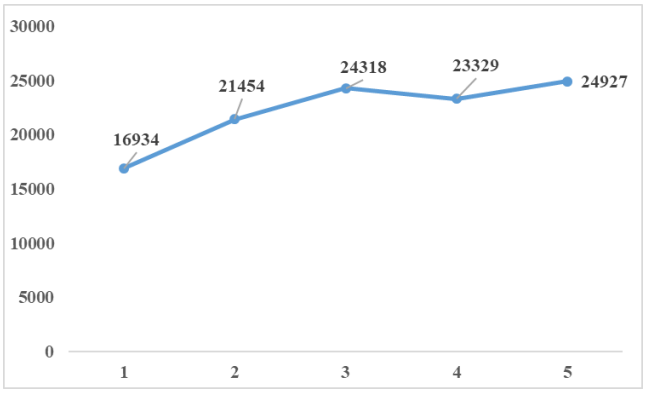


Figure 1. The trend of total revenue

It is worth noting that the decline in gross profit margin not only affects Tesla's profitability but also impacts investors' market expectations. As shown in Figure 2, in the first quarter of 2023, Tesla's gross profit margin fell below the 20% cautionary threshold, leading to a decline in its stock price. The prevailing view on Wall Street is that Tesla's profit margin may bottom out in the next 1-2 quarters and then begin to recover in the 2024 fiscal year.

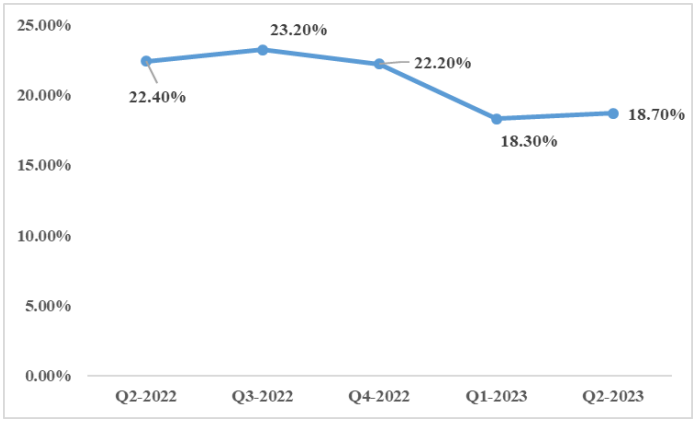


Figure 2. Adjusted EBITDA margin

Furthermore, changes in the supply-demand dynamics of the electric vehicle market are also underway, with some viewpoints indicating that supply may be outpacing demand. Globally, Tesla's electric vehicle inventories in regions like the United States and Europe are gradually increasing. According to the Twitter account TroyTeslike, which has nearly 110,000 followers including analysts and investors, as of the end of last July, Tesla had a total of 476,000 orders, with a backlog of approximately 72,000 orders. Additionally, Bernstein analyst Toni Sacconaghi mentioned in a report on May 1st that Tesla appears to be transitioning from supply-constrained (where deliveries grew in line with capacity and pricing) to demand-constrained (where price reductions stimulate demand and production speed outpaces delivery speed).

Apart from the impact on gross profit margin, Tesla's frequent price adjustments and pricing battles could give rise to other issues. Firstly, they might lead to consumer dissatisfaction. For instance, if a consumer recently purchased a new vehicle and quickly sees a price reduction, they might perceive it as unfair, potentially damaging consumer trust and brand loyalty. Secondly, they complicate sales forecasting. Frequent price adjustments can complicate accurate sales forecasting. Price uncertainties might cause potential consumers to hesitate between making a purchase now or waiting for a possible price reduction. Thirdly, they could harm brand value. Frequent pricing wars may negatively impact Tesla's brand value. Tesla's brand image is built upon innovation, quality, and cutting-edge technology in its products. Frequent price reductions could raise questions about the quality and value of Tesla's offerings.

All of these aspects underscore the challenges Tesla faces in striking a balance between market demand, production capacity, and pricing strategy.

3. Analysis on the Problems

The economic principles underlying Tesla's pricing strategy primarily involve factors such as supply and demand dynamics, cost-benefit analysis, and market positioning. The following points are notable:

3.1. Supply and Demand Dynamics

Based on Adam Smith's concept of the "invisible hand," market mechanisms automatically adjust supply and demand relationships, thereby influencing prices [6]. When demand exceeds supply, prices rise, as consumers are willing to pay higher prices for scarce goods. Conversely, when supply exceeds demand, prices decrease, as suppliers need to lower prices to attract consumers. Tesla's pricing strategy also adheres to this principle, balancing supply and demand through price adjustments.

3.2. Cost-Benefit Analysis

This represents a fundamental theory in business decision-making. According to Frederick Herzberg's two-factor theory, enterprise decisions involve satisfying basic needs (avoiding losses) and pursuing higher gratification (attaining profits) [7]. When determining pricing, Tesla considers production costs and expected profits. If production costs rise, Tesla might choose to increase prices to maintain the anticipated profit margin. Conversely, if production costs decrease, Tesla might opt to reduce prices to boost sales volume and market share.

3.3. Market Positioning

This rests on fundamental marketing theory. According to Philip Kotler's theory of product positioning, enterprises need to determine a product's position based on target markets and competitor conditions, which then influences pricing decisions [8]. Tesla's electric cars are positioned as high-end products, hence the relatively elevated pricing. However, with intensifying competition in the electric vehicle market, Tesla has started introducing lower-priced models to attract a broader consumer base.

The driving reasons behind Tesla's pricing strategy primarily aim to enhance market share and sales volume while maintaining profitability. This mirrors fundamental business objectives and aligns with Michael Porter's competitive strategy theory [9]. In the fiercely competitive electric vehicle market, Tesla needs to respond to market fluctuations and competitive pressures through flexible pricing strategies. Simultaneously, Tesla must factor in changes in production costs and market demand to ensure the effectiveness and sustainability of its pricing strategy.

Regarding the understanding and analysis of Tesla's inclination towards dynamic pricing, the author perceives it as a flexible pricing strategy that allows the company to adjust prices based on changes in market conditions. The adoption of dynamic pricing by Tesla can be deciphered from both economic and business strategy perspectives, encompassing several factors. Firstly, market competition: The automotive industry, especially the electric vehicle market, witnesses intense competition. New rivals and products continue to emerge, often leading to price wars. Dynamic pricing enables Tesla to swiftly respond to market shifts, such as the appearance of new competitors or price cuts by rivals. Through dynamic pricing, Tesla can uphold its product competitiveness in the market. Secondly, cost fluctuations: Tesla's production costs, including raw material expenses (such as batteries) and operational costs, may fluctuate with changing market conditions. For instance, increases in raw material prices or labor costs can lead to higher production expenses. Dynamic pricing enables Tesla to adjust prices when costs change, thereby maintaining its profit levels. Thirdly, supply-demand variations: Demand for Tesla's products may fluctuate due to factors such as seasons, economic cycles, or policy changes. For instance, government subsidy policies or consumer car-buying seasons might impact electric vehicle demand. Dynamic pricing allows Tesla to modify prices when demand changes, optimizing sales volume and revenue. Fourthly, market segmentation: Tesla

offers multiple product lines targeting different consumer groups. For instance, the different positioning of products represented by Model S and Model X for the high-end market, and Model 3 and Model Y for a broader consumer base. Dynamic pricing enables Tesla to set prices according to the target markets and competitive conditions of different products.

The implementation of dynamic pricing requires substantial market data and intricate analysis, yet it bestows upon Tesla greater flexibility and competitive advantage. It signifies a market-driven pricing strategy that aligns with Michael Porter's competitive strategy theory, emphasizing the need for enterprises to formulate strategies based on market and competitive conditions [10].

4. Solution

Recommendations for addressing the current challenges faced by Tesla due to its shift towards dynamic pricing, resulting in decreased gross profit, and other related issues, in order to enhance its profitability:

4.1. Enhance Production Efficiency

Tesla can boost production efficiency by introducing advanced manufacturing technologies, such as automation and artificial intelligence. For instance, incorporating robots and automated equipment can reduce labor costs and increase production speed. Moreover, Tesla can optimize its supply chain management by establishing closer collaborations with suppliers, thereby reducing material costs.

4.2. Product Differentiation

Tesla's products are already highly differentiated, featuring advanced autonomous driving and battery technologies. Tesla can further enhance product differentiation by introducing new features and services, such as advanced autonomous driving capabilities or more convenient vehicle services, allowing for higher pricing.

4.3. Service and Software Revenue

Tesla has already made strides in this domain, for instance, its Full Self-Driving package is a premium service. Tesla can continue to develop new paid services and software, such as advanced vehicle diagnostic services or additional entertainment and information offerings.

4.4. Market Segmentation

Tesla can meet diverse consumer needs by launching different levels of vehicle models. For instance, Tesla can introduce higher-end models to attract consumers willing to pay premium prices. Simultaneously, Tesla can offer more affordable models like the Model 3 to appeal to a broader consumer base.

4.5. Brand Building

Tesla can enhance its brand image through various strategies. For example, it can use advertising to increase brand awareness, engage in public relations activities to bolster brand reputation, and undertake corporate social responsibility initiatives to improve its brand image. Additionally, Tesla's CEO, Elon Musk, serves as a powerful brand asset, as his personal influence can contribute to boosting Tesla's brand perception.

4.6. Long-Term Perspective

Tesla needs to adopt a long-term perspective when addressing its gross profit challenges. While short-term price reductions might lead to temporary gross profit decreases, in the long run, they could help Tesla gain market share and increase sales, ultimately boosting overall profits through economies of scale. For example, Tesla could attract a larger consumer base through price reductions and then

generate revenue by offering various paid services and software. Concurrently, Tesla should closely monitor market and competitive conditions to adapt to market changes.

5. Conclusion

As a leader in the global market for new energy vehicles, Tesla's shift in pricing strategy has had profound implications both within and outside the industry. However, this transformation has also presented challenges to Tesla's gross profit margin. Consequently, the author decided to explore how Tesla addresses this challenge through dynamic equilibrium. Employing a case analysis research method, the study encompassed an analysis of Tesla's financial statements and a historical review of its pricing strategy changes. The author discovered that Tesla, amidst intensified price competition, maintains competitive gross profit margins by flexibly adjusting its product portfolio, pricing strategy, optimizing production, and supply chain management. The research unveils how Tesla, while preserving competitiveness, dynamically balances its pricing strategy and gross profit margins, offering insights into the competitive landscape of the new energy vehicle market and Tesla's business model. Although the study provides valuable insights, it primarily relies on publicly available data and information. The internal decision-making processes and strategy adjustments within Tesla might be more intricate, beyond the author's complete grasp. Furthermore, the research predominantly focuses on Tesla and might not be entirely applicable to other automakers. Future research could delve deeper into understanding how Tesla sustains its gross profit margins through technological innovation and operational efficiency enhancements. Additionally, a comparative analysis of Tesla's pricing strategy and gross profit margin management with other automakers could offer a more comprehensive industry perspective. In summary, this study offers a fresh perspective on comprehending Tesla's successful strategies and the competitive landscape of the new energy vehicle market. However, the author requires more in-depth research to gain a holistic understanding of this intricate matter.

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