

The Rise of Tesla: How the Electric Car Company is Changing the Automotive Industry

Raphael Frei

October 17, 2023

Over the past decade, Tesla's stock has become one of the most talked-about and closely watched investments. As a pioneer of the electric vehicle market, it has attracted many investors betting on the company's future growth and disruptive potential. Tesla's meteoric rise throughout the last decade has made it a favourite amongst growth investors. However, with the shift towards the production of electric vehicles, many legacy automakers are entering the competition with pure electric vehicle producers such as Tesla. With this dynamic happening, investing in Tesla stock requires careful consideration of the company's strengths, risks, and long-term perspectives. What are the opportunities and threats when investing in Tesla and how is Tesla navigating a rapidly changing industry? This article is aimed to provide answers to these questions by using a comprehensive overview of Tesla's fundamentals.

Drivers of growing demand for electric vehicles

Developments in recent years have shown that demand for electric vehicles around the globe is continuously increasing. The megatrend which is at the heart of this discourse is the rising awareness of climate-related problems and the willingness and necessity to shift away from fossil-fueled vehicles. Shifting consumer preferences towards greener and more sustainable transportation options is precisely what Tesla's core business targets, and what will drive growth in the future.

The second important development is the advancements in technology. Tesla and other industry players continuously register significant progress in battery technology, charging infrastructure and autonomous driving capabilities. This trend has a deflationary tendency on future EV prices and has the potential to act as a catalyst for higher consumer demand.

The third large driver which already plays an important role in accelerating the shift to sustainable mobility is the regulatory power of governments. First of all, they provide the legal and regulatory framework for EV companies to settle and start their business. Secondly, they promote EV adoption via various incentives for both, producers and consumers. Tax credits, subsidies, grants, and regulations mandating stricter emission standards to mention some. A prominent example can be found in the United States where the Biden administration established the Inflation Reduction Act (IRA). This act directs new federal spending toward reducing carbon emissions and aims to catalyse investments in domestic manufacturing capacity, which should improve international competitiveness.

Tesla Scales Up Production to Meet Growing Demand

Despite fluctuations in the stock price over the last few years, Tesla is seen as a trailblazer in the EV market. Due to its tremendous potential, Tesla is for many people the future leading player in the electric vehicle industry. It has an incredible track record in ramping up production and selling electric vehicles throughout the past decade. Sales were growing exponentially and exceeded 1.31 million units in 2022, up 40 per cent from 2021. Tesla's self-declared target is to maintain a 50 per cent compounded annual growth rate (CAGR) in deliveries. This means growing vehicle deliveries on average by 50 per cent annually for the next years. For 2023, Tesla expects to remain ahead of their long-term 50 per cent CAGR with around 1.8 million vehicle sales.

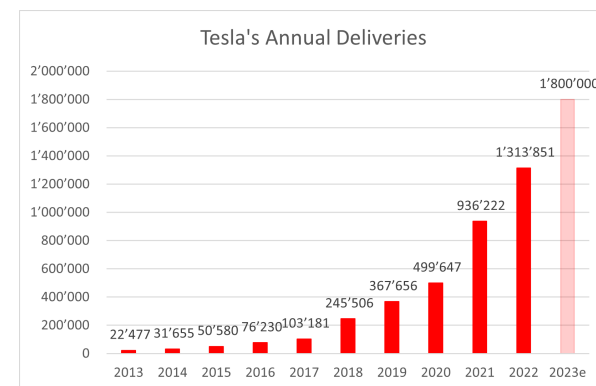


Figure 1: Source: Tesla Investor Relations

For reference, Tesla's biggest competitors in terms of sales volume, Volkswagen and BYD, sold 330'000 and 911'000 battery electric vehicles (BEVs) in 2022. For Volkswagen, this represents a YoY sales growth of 23 per cent and for BYD a YoY growth of 184 per

cent in the segment of BEVs. Some smaller start-ups from China experienced similar growth figures as BYD. These figures impressively show that other (legacy) car manufacturers are also striving to establish themselves in the EV sector. However, in terms of sales volume regarding BEVs, no one can hold a candle to Tesla so far. Prospectively, this dynamic could lead to an enthralling vie for market share and interesting market dynamics.

A Look at the Company's Impressive Profitability in Recent Years

Tesla's revenue grew exponentially with its car sales throughout the last decade. Its core business, which relies on automotive sales, contributed 88 per cent to total revenues in 2022. The rest was covered by energy generation / storage and services. Both of the latter two income streams registered exponential growth rates as well, however, their profit margins are relatively moderate, compared to their core business, which is highly profitable. If these sectors yield a profit in the future, they could become an important pillar in Tesla's revenue and income generation.

One major reason why Tesla's share price saw a massive upward trend in recent years, was owed to the fact that, along with constant increases in sales, Tesla could also increase profitability in the production of electric vehicles. Despite Tesla's average selling price (ASP) per vehicle being on a downward trajectory for many years they managed to consistently improve the operating margin from negative 14 per cent to positive 17 per cent between 2017 and 2022.

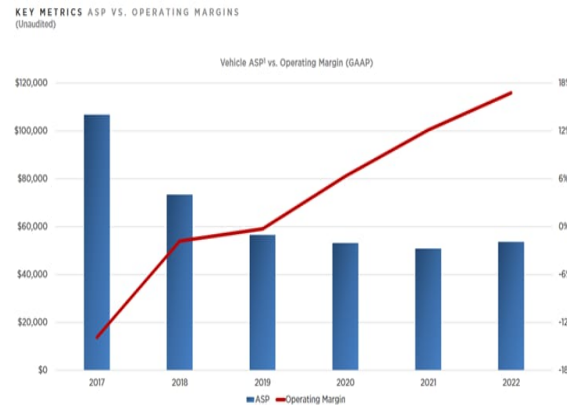


Figure 2: Source: Tesla Investor Relations

Some factors contributed to Tesla's ability to build such highly profitable electric vehicles. Since the beginning, Tesla put a great focus on constant innovation and development of its technologies. This includes its powertrains, battery technologies, and self-driving systems. Tesla's expenditure on research and development saw a sharp increase in recent years, amounting to almost 3.1 billion in 2022. Secondly, as Tesla has grown and ramped up production over the past years, it has been able to achieve economies of scale, which helped its margin expansion. By extending its product lines and volume expansion in combination with its vertically integrated supply chain, Tesla was able to distribute its fixed costs over more vehicles reducing per-unit costs and exercising control over the production process. They design, engineer, and manufacture their own vehicles, as well as produce their own battery cells and energy storage systems.

Controlling many of the stages in a production process enables Tesla to improve its quality, risk, and supply chain management compared to outsourcing the processes to third-party suppliers. This strategy proved to be very advantageous when facing supply chain

challenges during COVID-19. However, such a highly vertically integrated value chain also poses a threat to scaling up production as it may not use components from specialized suppliers who can provide more efficient production. Its high production efficiency and technological advancements in combination with its business model and strong customer base contributed to Tesla's profitability today. This is one major factor that led also to a positive stock price performance over that period. Other (legacy) automakers are trying to copy Tesla's model as it has turned out to be a success story so far.

The overall trend is towards increasing EV adoption which comes with increasing competition and deflationary tendencies in electric vehicle prices. Tesla's high margins, which have insulating characteristics, as they make a company more resilient to declining prices or increasing costs, put them in a great spot to protect its market share. In Q3 2022, Tesla's net profit per vehicle amounted to roughly USD 9'500, therefore, outperforming all its competitors by a wide margin. General Motors, the second most profitable EV manufacturer, had a net profit per vehicle of USD 2'150 and BYD of USD 1'550. It is worth mentioning that some Chinese EV startups, like Nio and XPENG Motors, experience a net loss per vehicle and therefore have negative operating margins just like Tesla a few years ago. However, to maintain market share in the future, Tesla needs to keep up its successful work of the past.

Tesla's Global Expansion

With China as the world's largest car market, where 59 per cent of all EVs were sold and 64 per cent of EVs

were produced in 2022, all car manufacturers have the incentive to strengthen their position in that region. Tesla made an important step in 2019 when it started production in Shanghai, which is the first gigafactory outside the US. This production site is the largest Tesla has built as of today. In 2022, over 750'000 vehicles were produced there. For Tesla, it's a strategically important factory, as it facilitates accessing and securing a presence in the Chinese market. Nevertheless, at the end of 2022, BYD still dominated the Chinese EV market with a roughly 30 per cent market share, compared to Tesla which covered around 10 per cent of the Chinese market. Overall, Tesla's expansion in China has been a significant part of its global growth strategy and the company is expected to continue investing in the Chinese market in the years to come. In addition to the Chinese market, Tesla needs to focus on their domestic market, the US and Europe. In the US, Tesla currently covers over 50 per cent of the EV market. However, to defend market share with increasing competition, constant expansions of production possibilities are necessary. In Europe, Tesla built a new gigafactory in Germany last year. With massive capital expenditure, global expansion can be pushed forward. In the last 5 years, Tesla has spent over 22 billion on capital expenditure. Primarily, these funds were used for the construction or extension of production plants. Furthermore, Tesla plans to use between 6 and 8 billion in 2023 and between 7 and 9 billion in 2024 and 2025 on capital expenditure.

Outlook and Conclusion

Tesla is an established EV company with a strong brand, innovative technologies, and impressive finan-

cial performance over the last few years. Tesla is well-positioned and despite growing competition, Tesla's unique business model has helped to maintain a competitive edge. As with all investments, this also comes with certain risks. Risks and challenges the company faces in the future have to be weighed against the opportunities and chances. Systematic risks include regulatory uncertainty, supply chain disruptions, and macroeconomic challenges. From a company-specific perspective it is still uncertain how increasing competition will affect Tesla's market share and profitability in the long run.

Concerning the valuation of Tesla stock, some believe its overvalued by comparing different metrics, such as the price-to-earnings ratio or the price-to-sales ratio with its peers. However, with Tesla's visions and growth potential, the current valuation might seem justifiable. One constant risk factor that comes with growth stocks such as Tesla is one, is a weakening future growth outlook. If Tesla's self-proclaimed growth target regarding vehicle sales cannot be met, the stock will possibly suffer a correction. However, for those who believe in the company's long-term growth prospects, Tesla represents a compelling investment opportunity.

References

Figures

- Figure 1: Tesla Investor Relations. Available at <https://ir.tesla.com/#quarterly-disclosure>
 - Figure 2: Tesla Investor Relations. Available at <https://ir.tesla.com/#quarterly-disclosure>
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