

## A Case Study: Tesla's Acquisition of Solar City

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**Abstract.** This paper analyzes Tesla's acquisition of Solar City in 2016 with the purpose of comprehensively evaluating the positive and negative impacts of this acquisition on Tesla. First, this article will introduce acquisition, a common means of business operation in the process of company development. Combined with the basic concept of acquisition, the paper analyzes the details of the typical acquisition case of Tesla's acquisition of Sun City. From the background of both companies, it mainly studies the main revenue mode and the main revenue source of the acquirer and the target company. Next, this paper will evaluate the benefits and disadvantages that the changes brought by the acquisition will bring to the company based on other acquisition cases. Then, this paper uses the SWOT model to analyze the motivation for Tesla's acquisition of SolarCity. After that, this paper will comprehensively evaluate the acquisition of Tesla from two perspectives. Finally, this article will synthesize all the above content of this acquisition to summarize.

**Keywords:** Merger and Acquisition, Tesla, SolarCity.

### 1. Introduction

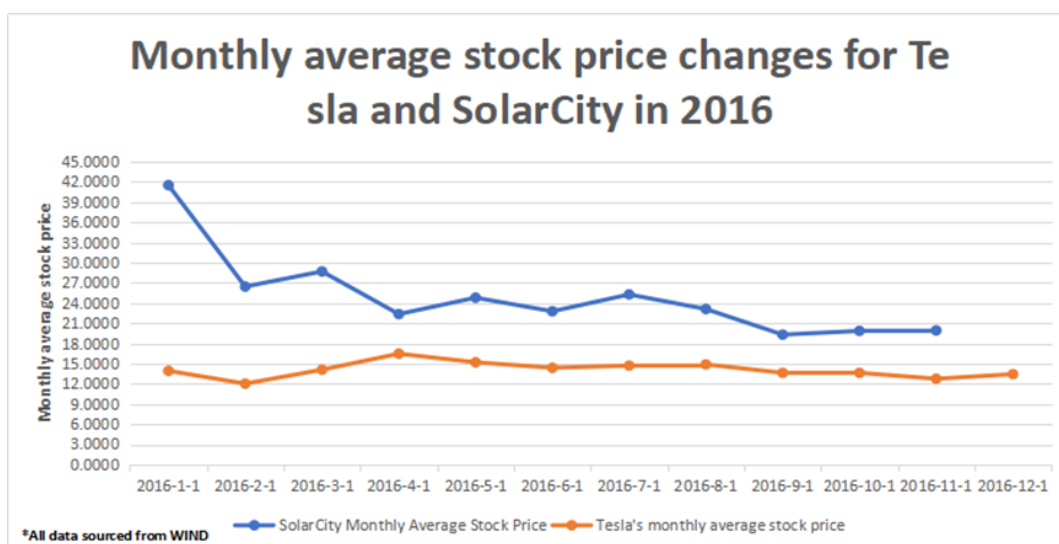
Mergers and acquisitions (M&A deals) are among the most important events in a company's lifecycle and have a significant impact on the firm's operations and activities. M&A transactions enable firms to grow faster than firms relying on organic growth, allow them to penetrate new markets and cross-sell into a new customer base, expand their scope by acquiring a set of complementary products, buy a pipeline of R&D intensive products, patents, or trade secrets, avoid upstream or downstream market foreclosure by suppliers, reduce taxes by means of new subsidiaries situated in tax-friendly countries, realize cost synergies by eliminating surplus facilities and overheads, reduce competition, improve access to capital, etc. [1]. The types of acquisitions can be distinguished into horizontal, vertical, and hybrid acquisitions. This article selects Tesla's acquisition of SolarCity in 2016 as a typical case, mainly discussing vertical acquisitions. Even though horizontal mergers and acquisitions are the most frequent among M&A activities, the benefits of horizontal mergers and acquisitions for enterprises are more intuitive, including expanding the acquiring company's existing business scope, expanding customer sources, and maintaining good market share. However, successful vertical acquisitions can also bring considerable advantages to enterprises. Vertical acquisition refers to the merger and acquisition behavior that occurs upstream and downstream of a company's production chain, playing a close role in connecting the industrial chain and accelerating the production process. After the vertical acquisition occurs, the acquiring party can improve its control over raw materials, sales channels, and audience, to some extent, breaking away from dependence on suppliers and users, thereby improving the company's market vision and facing competitors entering the industry. Tesla's acquisition of SolarCity is a typical vertical acquisition transaction. However, the successful occurrence of the acquisition does not necessarily mean that it is successful. Even in theory, Tesla's acquisition of SolarCity can improve Tesla's industrial chain and generate good synergies, especially cost and management synergies. This seems perfect for Tesla's long-term strategic framework, as after the acquisition, Tesla has described itself in its financial reports as a new vertically integrated enterprise with a "global service network that integrates car dealerships, service centers, and super charging stations". But with the arrival of infinite opportunities, there are also enormous risks and challenges. Agrawal and Jaffe conclude that there is strong evidence of long-term underperformance following a takeover event but caution that inadequate estimation techniques (up to the 1990s) make drawing robust conclusions from these

studies rather difficult [2]. Although Tesla's acquisition of SolarCity is less than a decade old, the risks of this acquisition have gradually emerged, especially the impact on Tesla's balance sheet. Before the acquisition, Tesla's financial situation was not optimistic, which was reflected in Tesla's continuous losses in the years before the merger. Although SolarCity also occupies a large market share of the solar market, SolarCity's asset liability ratio is also very high. SolarCity has generated only about \$1.5 billion in revenue since its founding and has accumulated nearly \$3 billion in debt. This has shaken the market's confidence in the prospects of the acquisition, and Tesla's stock suffered a decline when news of the decision was first published in 2016. In the following text, this article will first analyze the advantages and disadvantages of the acquisition, starting from the changes it brings to the company. Furthermore, the SWOT method is used to analyze the reasons behind Tesla's willingness to acquire and to determine what kind of business intention Tesla intends to achieve through this acquisition. Finally, use the financial data reflected in Tesla's financial statements before and after the acquisition to analyze the financial performance of this transaction and further evaluate the impact of this acquisition on Tesla based on Tesla's operational and financial risks.

## 2. Advantages and Disadvantages of Acquisitions

This paper will study the effect of mergers and acquisitions on share prices. Many of the works that have delved into this topic. Some have studied them via their abnormal returns, and others have done it through a study of their annual accounts because of the many ways to study this phenomenon [3]. This article will mainly start from two perspectives. Firstly, it will analyze the changes in Tesla's stock price before and after the announcement of the acquisition in the year of the acquisition. When a merger or acquisition is announced, a significant amount of information about that particular deal is revealed. This information can be used to evaluate the stock market's reaction to a merger or an acquisition announcement [4]. Secondly, it will analyze the changes in Tesla's stock price in the years before and after the acquisition. From the first perspective, the overall market attitude towards Tesla's acquisition can be seen. The second perspective is whether Tesla has achieved scale expansion after the acquisition was completed.

### 2.1. Analysis of changes in Tesla's stock price before and after the acquisition



**Fig. 1** Monthly average stock price changes for Tesla and SolarCity in 2016

This article will first study the impact of Tesla's merger and acquisition declaration on Tesla's stock price in 2016. Therefore, based on Tesla's monthly average stock data in 2016, this paper has made statistics and drawn Figure 1. Tesla's shares plunged 10% the day after the merger announcement in 2016, suggesting that Wall Street financial analysts were briefly bearish on the deal. But then, on November 5, 2016, the Institutional Shareholder Services Group, a corporate governance

consulting firm, supported Tesla to complete the acquisition for \$2.3 billion in consideration of the cost synergies of Tesla and SolarCity, and the shares of both Tesla and SolarCity rose again. After the acquisition, Tesla's stock has been rising all the way up, surpassing the market value of Ford and Fiat Chrysler and once surpassing General Motors. From Tesla's monthly stock price changes in 2016, the market is generally confident in the acquisition, mainly due to the synergies of the acquisition that are very attractive, which is one of the advantages of the acquisition. Mention of Tesla's synergies, the first is the cost synergies. After the acquisition, Tesla will enter the process of vertical integration to build the world's only integrated sustainable energy company. At the same time, the company's business area is wider than automotive manufacturing and battery storage. Still, it will also enter the solar industry to achieve the overall service from energy generation and storage to transportation. At the same time, reducing carbon emissions and fossil fuel costs will also become a huge advantage for Tesla to compete in the industry. Trading carbon emission credits will also generate considerable additional profits for Tesla every year. From the perspective of management synergy benefits because SolarCity occupies a large market share in the solar industry. Before the merger, SolarCity also invested a lot of resources in research and development in this field. SolarCity in the industry has a relatively mature technology and large market influence. This shows that SolarCity management and technical personnel in the field of new energy industry experience, after the completion of the merger, because Tesla is also in the field of new energy enterprises, both sides of the technical personnel and management personnel can form relatively good integration, produce good management synergy, improve the management efficiency of daily operation, to speed up the pace of technology research and development innovation.

### 3. Analysis of the Changes in Tesla Stock Price before and after the Acquisition

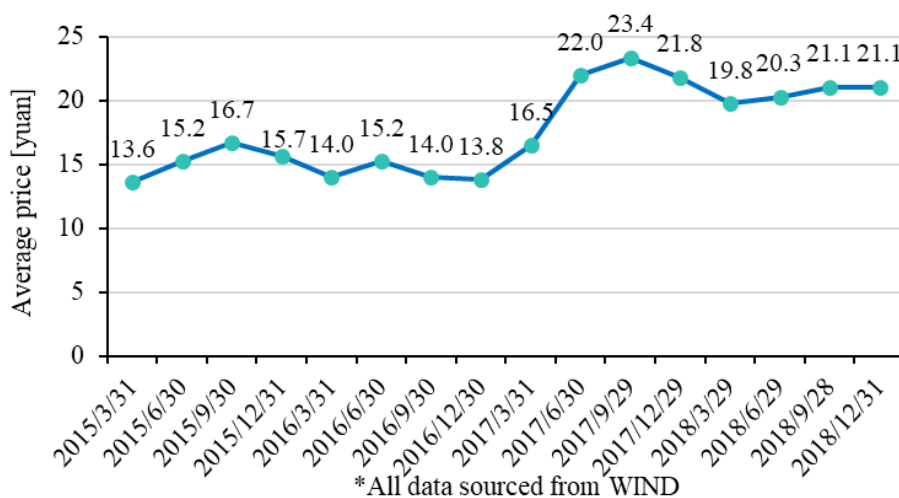


Fig. 2 Stock price of Tesla

It can be clear from Figure 2 that Tesla's stock price rose significantly after the completion of the acquisition, but from the fourth quarter of 2017 to the second quarter of 18, Tesla's stock price fell back again. This shows that the acquisition is unstable, which is one of the disadvantages of the acquisition. However, in the short term, due to the good synergies, the market is full of confidence in Tesla's stock price. However, since Tesla and SolarCity are both new energy industries, the new energy industry is that it needs a large amount of cash to invest in research and development and sales in the early stage. However, the asset-liability ratio of Tesla and SolarCity is relatively poor, which adds a lot of pressure on Tesla in the operation activities after the merger and adds more cash investment to the already scarce cash flow, which greatly limits the profitability of Tesla by the acquisition.

### **3.1. Analyzing Tesla's Trading Motivation for Acquiring SolarCity Based on SWOT Analysis**

SWOT analysis was first used in the 1970s as a tool for business management. This analytical approach assesses the Strengths (S), Weaknesses (W), Opportunities (O), and Threats (T) of an organization, industry, company, or sector [5]. It is used to evaluate internal (Strengths and Weaknesses) and external (Opportunities and Threats) factors, allowing better guidance and identification of the current and future potential [6]. This paper will conduct a SWOT analysis of the status of Tesla after the completion of the acquisition so as to determine what strength and opportunities Tesla will gain after the acquisition, which is also the focus of this part, and analyze the threats and disadvantages Tesla will have in the completion of the acquisition. Because the business behavior of the enterprise is always profit-oriented, the comprehensive analysis of the SWOT model it helps Tesla to weigh the advantages and disadvantages of the acquisition and thus get the conclusion of the motivation of Tesla's transaction.

### **3.2. Strength after the Completion of Acquisition**

SolarCity, originally a photovoltaic power generation business company, can provide customers with more comprehensive solar energy services. But different from the traditional solar industry, SolarCity's main revenue source is the lease of agreements with customers on the construction and maintenance of photovoltaic systems and providing power generation services. This model is more popular in the market. SolarCity was founded in October 2008, starting early in the solar sector, with mature technology and occupying a large market share, which makes it a leader in the industry. After the acquisition of SolarCity, Tesla can not only harvest SolarCity mature solar technology, improve production efficiency and reduce production costs, form good cost synergies, accelerate the development progress of vertically integrated industry, but also undertake the market share of SolarCity in the solar market and expand the industrial chain. This is also the most important motivation considered in this article to attract Tesla to complete this acquisition.

### **3.3. Opportunities after the Completion of Acquisition**

Related or focused acquisitions outperform unrelated or diversifying acquisitions, as the former type of acquirers are more likely to have the skills and resources required to operate and integrate the target firm. These findings hold regardless of whether relatedness is measured by means of industry classifications, product market overlap, strategic compatibility, cultural similarities, complementarities in the supply chain, or technological overlap [1]. Tesla's acquisition of SolarCity is a related acquisition because the enterprise type of SolarCity belongs to an important part of Tesla's production chain, which also brings unlimited opportunities to the acquisition of Tesla. After the SolarCity acquisition, a complete cycle will be mastered by Tesla: from solar photovoltaic installation to Powerwall and Powerpack for energy storage, and finally, by Tesla's cars and homes for daily consumption. This is a new concept for both the new energy market and the automotive market, and Tesla is likely to become the first new and integrated sustainable energy company. Such a complete and new vertical structure can put Tesla in a unique leading position in the market after the merger, giving customers strong attraction but also causing great pressure on new enterprises that want to enter this market. Such an attractive opportunity is also an important reason for Tesla to make the acquisition.

### **3.4. Weakness after the Completion of Acquisition**

SolarCity has obvious industrial advantages in terms of solar energy. Due to its new energy enterprise characteristics, Google and Space X have invested heavily and even received government subsidies, which has also led to the expansion of its industry scale. Nevertheless, SolarCity is still heavily in debt and needs more cash flow due to its huge initial investment. The cash flow state of Tesla is also not optimistic. In the first few years of the acquisition, Tesla was also in a state of negative cash flow. It can be foreseen before the acquisition begins that the debt will certainly put a lot of pressure on Tesla after the acquisition is completed.

### **3.5. The Threat after the Completion of Acquisition**

Many of the most emerging solar companies are growing fast, such as Sunpower. In the aspect of electric vehicles, the addition of a series of established automobile manufacturers with a deep customer base, such as BMW and Ford, also makes the market more intense. BYD, in particular, is Tesla's main strong rival in the electric car market. Both the acquirer, Tesla, and SolarCity, the target company, face huge challenges and threats in the external market space.

To sum up, the main motivation for Tesla's acquisition of SolarCity comes from the strong synergistic benefits of SolarCity for Tesla's industrial chain, mature technology, and excellent market share ratio, which are conducive to the improvement of Tesla itself and the promotion of its strategic conception. The disadvantage is mainly from the debt and the competitive environment. After weighing the pros and cons, it is easy to find that the competitive advantage that the acquisition of SolarCity can bring to Tesla can cover up some shortcomings of the acquisition, which is also the reason for Tesla's determination to complete the acquisition.

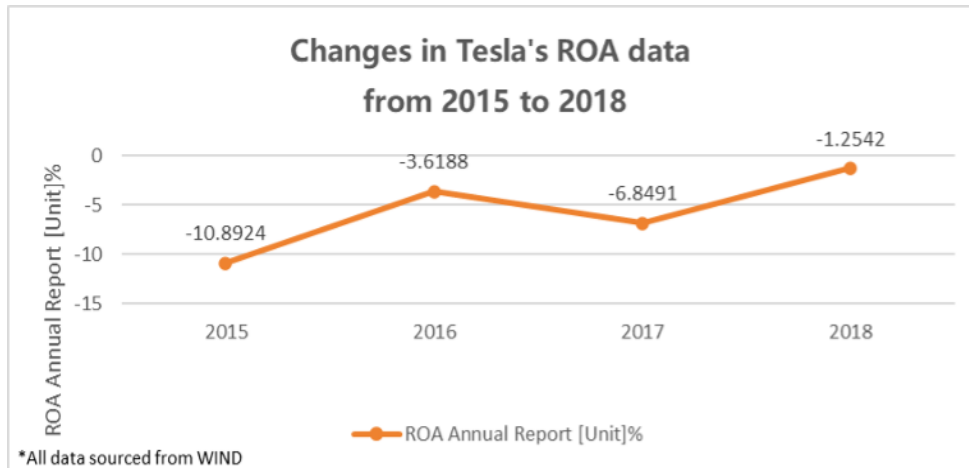
## **4. Evaluation of Tesla's Acquisition of SolarCity**

This article will evaluate the acquisition in two aspects. The first is the perspective of financial data. Usually, to evaluate the success of an acquisition, it can analyze the changes in profitability and solvency of the company before and after the acquisition, which are two key factors. From Tesla in the acquisition before and after the financial statements calculated all kinds of return data, such as ROA, ROE, and NPM value, can more intuitive reflect the acquisition to Tesla profitability changes. At the same time, the balance sheet of asset-liability ratio and quick ratio can also intuitively reflect the tesla after the completion of the acquisition solvency change. On the other hand, it evaluates the risks faced by Tesla after the completion of the acquisition, which is mainly divided into financial and operational risks. This paper mainly builds the index system of performance evaluation from two aspects: profitability and solvency.

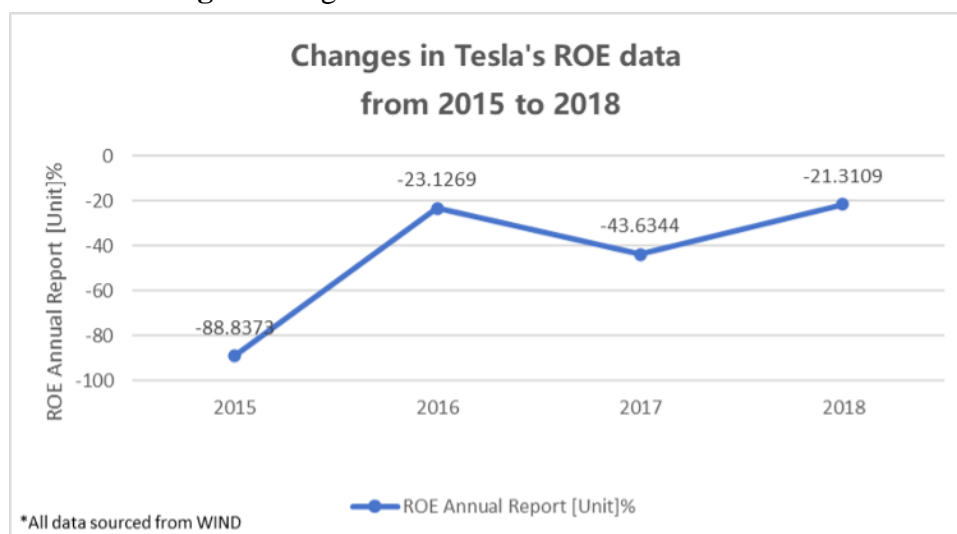
### **4.1. Financial Performance**

#### **4.1.1 Profitability**

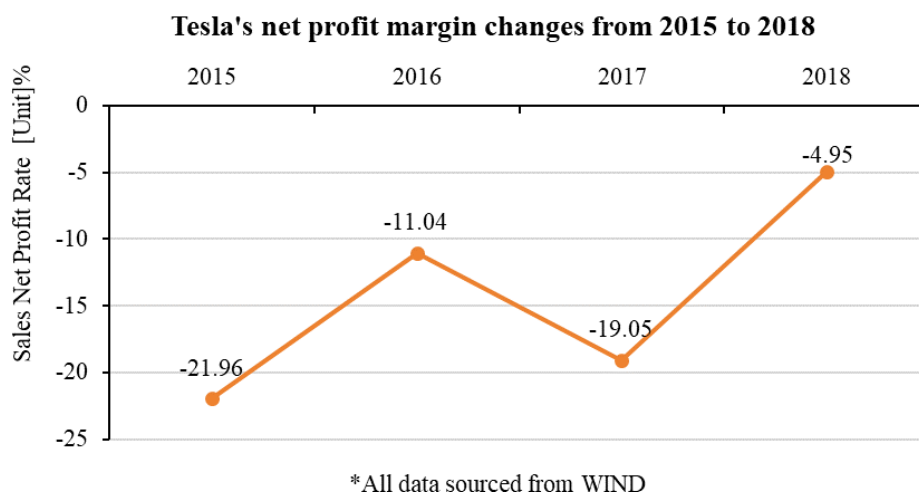
In this paper, ROA, ROE, and NPM are selected as the reference indicators to analyze the changes in Tesla's profitability before and after the acquisition. Return On Assets (ROA) is a ratio that measures the company's ability to generate profits using total assets. This ratio is directly proportional to the stock price. Return On Equity (ROE) is used to measure the company's rate of return or the company's effectiveness in generating profits. Net Profit Margin (NPM) is a ratio that measures the company's ability to generate profits using the company's net sales [7]. It can be clearly found from the chart that Tesla's ROA, ROE, and NPM values are all negative both before and after the acquisition, which shows that Tesla did not turn a profit and was always in a loss because of the acquisition. At the same time, these three values of Tesla are in a fluctuating trend after the acquisition, which shows that in the short term, it is difficult for Tesla to rely on the completion of this acquisition in the short term. But from a long-term point of view, because Figures 3, 4, and 5 are all in the rising trend, it shows that SolarCity acquisition of Tesla's profitability improved, and based on the acquisition can produce good synergies, the characteristics of new energy enterprises and the advancement of tesla strategic idea, the acquisition in the long term can help tesla is huge.



**Fig. 3** Changes in Tesla's ROA from 2015 to 2018



**Fig. 4** Changes in Tesla's ROE from 2015 to 2018

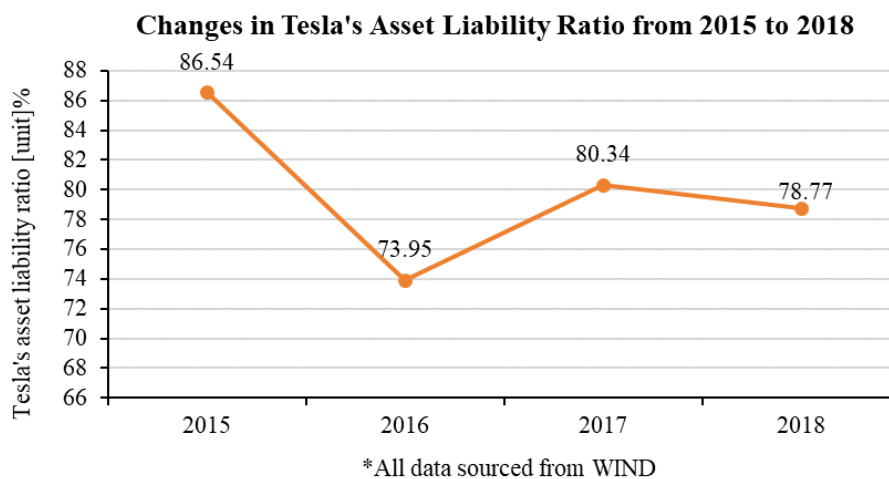


**Fig. 5** Tesla's net profit margin changes from 2015 to 2018

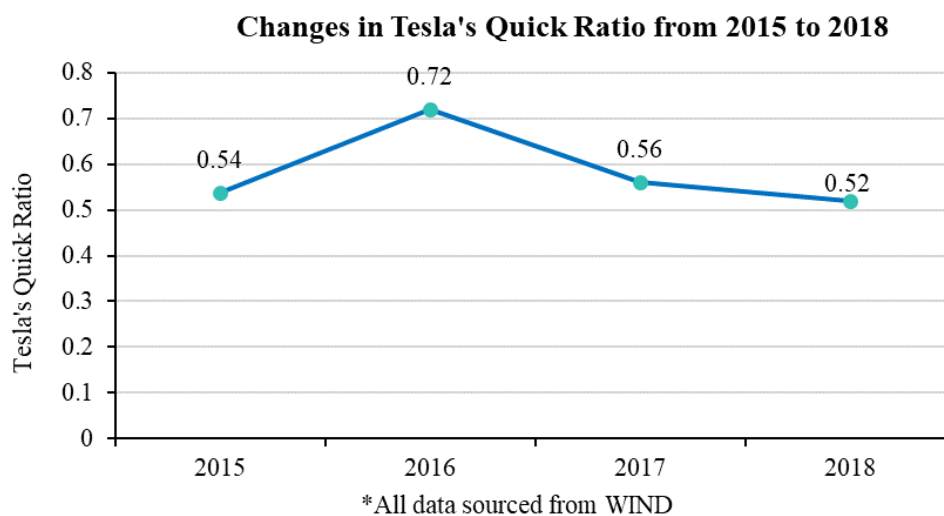
#### 4.1.2 Debt paying ability

An entity's ability to maintain its short-term debt-paying ability is important to all users of financial statements. Suppose the entity cannot maintain a short-term debt-paying ability. In that case, it will not be able to maintain a long term debt paying ability, nor will it be able to satisfy its stockholders. Even a very profitable entity will find itself bankrupt if it fails to meet its obligations to short-term creditors. The ability to pay current obligations when due is also related to the cash-

generating ability of the firm [8]. The two indicators that can directly reflect solvency are the asset-liability ratio and the quick ratio. Therefore, this paper collects the changes in Tesla's asset-liability ratio and the quick ratio before and after the acquisition (see Figure 6 and Figure 7). It can be clearly found from the chart that Tesla maintains a very high debt-to-asset ratio, both before and after the acquisition. This shows that even after the completion of the merger, Tesla's day-to-day operations are still facing greater debt pressure. In terms of the quick ratio, Tesla's quick ratio rose to 0.72 in 2016 after the acquisition was completed. This shows that the deal helped to improve Tesla's solvency in the year of the acquisition. But overall, Tesla's quick ratio does not exceed 1, and in 2018, Tesla's quick ratio dropped to 0.52, which is lower than before the acquisition began in 2015. The acid test ratio can be increased by increasing accounts receivable turnover, accounts receivable turnover in days, inventory turnover, and inventory turnover in days. Still, it can be decreased due to an increase in the cash conversion cycle [9]. The acid ratio is the quick ratio. After the acquisition, the quick ratio shown in the picture of Tesla shows a downward trend again, which directly shows the long cash conversion cycle of Tesla, which once again confirms the problem of seriously insufficient cash flow and the high debt ratio of Tesla. The low quick ratio of no more than 1 shows that Tesla's cash flow is still seriously insufficient, and the continuous decline of the quick ratio after 2016 also shows that the acquisition will not help the improvement of Tesla in the short term and even have a negative effect.



**Fig. 6** Changes in Tesla's Asset Liability Ratio from 2015 to 2018



**Fig. 7** Changes in Tesla's Quick Ratio from 2015 to 2018

## 4.2. Risk Assessment

When analyzing the risks a company faces after a merger and acquisition, operational and financial risks are usually considered simultaneously, representing the company's potential crisis in two different aspects.

### 4.2.1 Operational risk

Following Basel II regulation for banks, operational risk is defined as the risk of a loss resulting from inadequate or failed internal processes, people or systems or from external events [10].

The loss of core personnel is an unpredictable loss for any enterprise. After the merger, Tesla also faced such a risk due to the hidden danger of due diligence and personnel overlap. As competition in the new energy industry intensifies, so will competition for people with skills that Tesla needs for its business, including electrical engineering, software engineering, electric vehicle skills, and construction engineering. Especially after the acquisition of SolarCity, Tesla needed to reasonably integrate the management and technical personnel of the target company after the merger, resulting in different degrees of overlap between the management and technical departments. In such a relatively chaotic process of personnel restructuring, and at the same time, other Tesla competitors and mature enterprises have offered olive branches to Tesla's talents, the possibility of talent loss for Tesla has been further aggravated.

Competition in the new energy market is fierce, and with the continuous influx of competitors, such competition is expected to be more intense in the future. The consequence of intensified competition may lead to the decline of Tesla's car sales, so that the price drop too fast will cause a problem of brand reputation, which is also a point that Tesla is often criticized by consumers, resulting in a vicious circle, resulting in a large loss of customers.

In the energy generation and storage business, Tesla's acquisition of SolarCity can help it form a mature vertical structure in the industrial chain and develop into an integrated enterprise. However, the market competition in the energy generation and power storage business is equally fierce. Tesla still takes the sales of new energy vehicles as the main source of income after the acquisition, which shows that Tesla still puts the development center on new energy vehicles. The proportion of the solar power industry has always been small. Development could be faster, which is not conducive to its long-term competitiveness in this part of the business.

### 4.2.2 Financial risk

Economic systems are increasingly prone to complexity and uncertainty. Therefore, making well-informed decisions requires risk analysis, control, and mitigation [11]. Therefore, vigilance and control of financial risks is also a major factor that needs attention after mergers and acquisitions.

Tesla has maintained a high debt ratio before and after the acquisition. SolarCity, as the target company, has an extreme cash flow shortage and a high debt ratio. At the same time, SolarCity and Tesla, as new energy enterprises, have huge cash investments in the early stage, which also brings huge cash flow pressure to Tesla. In order to add more flexibility and further diversify Tesla's cash returns, Tesla has invested in a large number of digital currencies after 2021. The popularity of digital currency assets is a relatively recent trend, and whether consumers, businesses, and investors are willing to be bullish on the development of the digital currency market in the long term is unpredictable. In recent years, the volatility of the digital currency market has been large, and it isn't easy to maintain stability. Especially in the case of the global economic downturn, once Tesla loses money in the digital currency market, it is a more serious blow to the enterprise.

## 5. Conclusion

In the short term, Tesla's acquisition of SolarCity is not optimistic and cannot be considered a highly profitable acquisition in the short term. This is mainly due to the operational risks and financial risks faced by Tesla, as well as the integration and reorganization of the merger and acquisition without the best due diligence and positions, and more importantly, the asset liability ratio of the



target company and the acquirer is too high, and the serious lack of cash flow. These factors limit the acquisition of Tesla to bring more benefits.

However, from a long-term perspective, mainly in the new energy industry (which belongs to the emerging industry), mergers and acquisitions cannot be judged solely from short-term interests. Still, they should focus on long-term stable market development and industry trends. In particular, vertically integrated acquisitions such as Tesla can not only form good synergies, but also promote the long-term development of the enterprise. This is mainly due to the strategic overlap and industrial restructuring between Tesla and SolarCity. From the stock price changes after the completion of the acquisition and various financial indicators reflecting profitability, the acquisition is undoubtedly significant for the long-term development of Tesla.

## References

- [1] Renneboog, L., & Vansteenkiste, C. (2019). Failure and Success in Mergers and Acquisitions. CentER Discussion Paper; Vol. 2019-026. CentER, Center for Economic Research.
- [2] Agrawal, A., & Jaffe, J. F. (2000). The post-merger performance puzzle. *Advances in Mergers and Acquisitions*, 1, 7–41.
- [3] Kyriazopoulos, G., & Rafailia, M. (2019). Mergers and Acquisitions from an Accounting Approach: A Review of Empirical Literature. *Research Journal of Finance and Accounting*, 8.
- [4] Dilshad, M. N. (2013). Profitability Analysis of Mergers and Acquisitions: An Event Study Approach. *Business and Economic Research*, 90.
- [5] Gao, C. Y., & Peng, D. H. (2011). Consolidating SWOT analysis with nonhomogeneous uncertain preference information. *Knowledge-Based Systems*, 24(6), 796-808.
- [6] Nezha, M., Rossi, A., El Khalidi, K., Pavel, A. B., Cherif, E. K., Ouaty, O. E., & Fekri, A. (2021). A SWOT Analysis to understand the impact of tourism industry on the Three pillars social Economy and Environment. *EDP Sciences*, 2-3.
- [7] Suroso, S. (2021). Between ROA, ROE, NPM, and EBIT Variables, which can Change the Stock Price. *Journal of Economics*, 29.
- [8] Wijayanti, R. A. A. (2022). Debt Paying Ability with Liquidity of Short Term Assets in a Business. *Liaison Journal of Best*, 1(1), 82-89.
- [9] Rehman, M. W. U. (2015). Liquidity of Short-term Assets Related to Debt Paying Ability: An Empirical Study on Pharmaceuticals Sector of Karachi Stock Exchange. *Research Journal of Finance and Accounting*, 112.
- [10] Basel Committee on Banking Supervision. (2006). The first pillar-minimum capital requirements. BIS consultative document.
- [11] Heckmann, I., Comes, T., & Nickel, S. (2014). A critical review on supply chain risk – Definition, measure, and modeling. *Omega*, 119.