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BUSINESS AND FINANCIAL ANALYSIS OF TESLA INC.

Bachelor's thesis
International Business Administration, Finance and Accounting

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ABSTRACT

This bachelor's thesis provides business and financial analysis of Tesla Inc. The aim of this thesis is to make a business and financial analysis and thus to determine Tesla's value by focusing on factors that influence Tesla's actual business and its future. The historical data covers mostly the last five years data as electric vehicle car industry is rapidly changing. In this thesis I found out that Tesla's current performance is not sustainable and that the share price is overvalued. Investors are waiting that Tesla will take over the auto-industry and gain the all returns exclusively, but Tesla's peers are mature companies who are also developing electric vehicles with strong teams. To take over the industry Tesla should be provide something that is better than its competitors'. The question is, will Tesla make a breakthrough to become a major automaker? Until this day they have not invented anything revolutionary which would make them superior to the mature car makers and thus enable them to take over the industry.

Keywords: business analysis, financial analysis, Tesla Inc, electric vehicle, automobile industry, electric vehicle industry, ratios, share price, Elon Musk, strategic analysis

INTRODUCTION

This thesis is focusing on business and financial analysis of Tesla Inc, an American automotive and energy company.There are several reasons for choosing this topic. Firstly, the automotive industry has a big impact on economy worldwide. Automobile manufacturers manufacture 60 million vehicles every year, consuming near the half of the oil in the world. There are 9 million directly employed people in automobile industry, and indirectly even more. The industry has strong interplay with its supply industries giving it vitally important role in economic development as well as influence on politics. The industry is also reasonably old, as it has existed more than 100 years and it provides well-paid jobs for its workers. However, there has been drop in the average margins. In 1920s the margin was 20% whereas now it is only 5 % meaning the competition has tightened . This is due the market capitalization; automobile industry accounts only 1,6% of the stock market in Europe, and 0,6% in the U.S. To survive in this competed industry, Tesla needs to persuade customers that they can offer something better than other car makers. (Papatheodorou, 2019)

In the first part I will introduce Tesla Inc and take a look on its share price development. I will also go through Tesla's history, and study its organization and the automobile and electric vehicle industries in general. The second part of this thesis is a strategic analysis part. As there are many tools for valuing a company, I will analyse Tesla Inc both externally and internally in the strategic analysis part. This chapter includes PEST(EL) analysis, Porter's five forces, and Swot analysis. The third chapter is the financial analysis part including ratios used for valuing a company. Each ratios are first introduced in the theoretical part and then applied to Tesla and its peers.

When valuing a company like Tesla there are some additional challenges compared to stable, mature companies. Tesla, Inc. is relatively young, growing company. What is typical for this kind of companies is that their cash flows from investment activities are substantial, and in turn operating cash flows are small. (Courses.lumenlearning.com, 2019) making it more difficult to analyse its financial performance. However, by comparing Tesla to its peers it is possible to make a necessary valuation of the company.

This thesis will give an answer to the following questions:

1. Is Tesla Inc share price overvalued?

2. Will Tesla take over the automobile industry?

3. What is Tesla's position compared to its peers?

Tesla Inc is a multinational company operating in the global market. I will use the segmentation of Europe, North America and Asia. Furthermore, Tesla is not only operating in automobile industry as they also operate in energy industry. As 92.8% of the revenue were from automotive business and only 7.2% from energy generation and storing in 2018 (Craft.co, 2019), I will be focusing on automotive segment. However, all business segments will be included in the analysis part to get more accurate picture of the future prospects of Tesla's value. The information used will be Tesla's public information from Tesla's annual reports from 2014 to 2018. The main competitors chosen are Bayerische Motoren Werke AG (BMW), Audi AG (Audi), Toyota Motor Corporation (Toyota), Ford Motor Company (Ford) and General Motors Company (GM).

This thesis is divided into three sections and conclusion. The information used is publicly available information from Tesla's annual reports, research papers, financial textbooks and websites, and market data. I will use commonly known theories, which will be presented in this thesis.

1. OVERVIEW OF TESLA INC

Tesla, Inc. is an American automobile and energy company designing, manufacturing, developing and selling totally electric vehicles and energy storage systems globally. They also make installing, operating and maintaining for solar and energy storage systems, meaning they operate both automotive and energy storage and generations segments. They sell and lease both electric vehicles and energy systems to residential and commercial customers. The headquarter is located in Palo Alto, California. ("Tesla: vehicle deliveries by quarter 2018 | Statistic", 2019)
The energy storage products are designed for homes, commercial purposes and utility sites. These battery systems include backup power provision, grid independence, peak demand reduction, demand responding, reduce of intermittency of renewable generation, and services for wholesale electric market. Tesla has a great variety of energy products both for private customers and commercial customers. For private customers they have own global service and sales network.

Tesla was set founded in 2003 by engineers with a mission that there is no need to make compromise with driving an electric car. Tesla wants to produce cars that are better than gasoline cars, in every way. Now Tesla produces electric vehicles, clean energy generation and storage products. The world's first premium all-electric vehicle, Model S, was designed in 2008. In 2015 they expanded their product line with Model X, which is an electric sports vehicle, and in 2016 they launched Model 3, a low-priced electric vehicle. In 2017 they released Tesla Semi, an electric truck.

All vehicles are produced in California in Gigafactory 2, where most of the components are made as well. As their vision is to provide sustainable energy ecosystem, they are also producing energy solutions, Powerwall, Powerpack and Solar Roof for generating, storing and consuming energy. In Gigafactory 1 Tesla produces batteries to meet their production goals. The vehicles are sold in North America, Asia, and Europe.("Tesla -Statistics", 2019)

Tesla's vision is to bring electric cars which are accessible and affordable to more and more people on the market as well as designing clean energy production. They want to combine their already existing electric cars, batteries and renewable energy generation and storage in the future. ("About Tesla", Tesla 2019)

The company delivered vehicles worldwide 244,920 units in total in 2018. Especially the last quarter in 2018 was successful, when they delivered three times the number of vehicles compared to the first quarter in 2018. ("Tesla: vehicle deliveries by quarter 2018 | Statistic", 2019). Even though Tesla is relatively young company, it has already been amongst the top 10 most valuable car brands worldwide and valued worth of 4.4 billion US dollars in 2017. In 2018 Tesla's brand was valued to be 9.42 billion US dollars, just behind Audi having a brand value of 9.63 billion US dollars. ("Most valuable car brands", 2019)

One of the founders and the CEO of Tesla Inc, Elon Musk, is a charismatic leader who has managed to gain the world's attention on him and Tesla. Musk is an innovator with a continuous need to create something new. For this he needs money, a lot. The question is, what makes people believe in him and in Tesla? The company has not have any profitable fiscal year during its 15 years history. The question is, will the investors ever earn any return on their investments, or will everything be spent till there is no cash left and no one willing to invest to Tesla anymore? . But the reasons for people's strong trust are the charismatic CEO who knows how to sell his ideas, and the fact that many startups which were set up in the early 2000's are based on the insight that markets are "winner-take-all (WTA) ones" (Kenton, 2018). So if the investors win, they win big. They will become a monopoly with all the benefits. For that the company must grow very fast to eliminate the competitors and become a winner. And for that they need lot of invested money as the competitors mostly are normal firms which make profit. So investing in Tesla one has to understand that the idea is to wait till Tesla becomes a winner and takes everything. And then is investor's time to get massive returns.

1.1. History of Tesla Inc

Tesla was founded in 2003 by Martin Eberhard and Marc Tarpenning with co-founders JB Straubel, Ian Wright and Elon Musk (Kumparak, 2015).The name Tesla was given after the famous physicist Nikola Tesla. Eberhard was the CEO of Tesla until August 2007, when he was asked to leave the position and the company. A few months later, on November 2007, an Israeli engineer Ze'ev Drori was named CEO of the company, officially becoming the CEO of the company on December 3, 2007.

Drori led the company efficiently managing to start the production of the Roadster on time. They succeeded in achieving the production goals and by mid-March, the company was producing Roadsters regularly. The Roadster with a price tag of $109,000, was produced until 2012. They sold in total 2,450 Roadsters during these years. (Baer, 2014)

Elon Musk has always had an important role in Tesla, although he has not always been the CEO. In 2004 Musk was a company's chairman leading funding round for company's Series A. In 2006, he wrote a blog post with a title "The Secret Tesla Motors Master Plan (just between you and me)" where he told about the mission of the company to adopt the "solar electric economy" -and fast telling in more details about Tesla's pompous long term plans. Musk has always had this audacious approach for Tesla, and he has always openly declared his goals towards the company. (tesla.com, 2019)

During the financial crisis in 2008 Tesla also had difficulties, and they had delays with producing Model S. Musk said in public that he would take over the company and the launching of Model S would be postponed till mid-2011. The previous deadline had been in 2010. The financial

situation of Tesla did not get better and by November 2008 they were near bankruptcy. Therefore the board of directors of the company decided to approve $40 million in convertible debt financing to get the situation better.

After the hardest financial times Tesla introduced their first electric sedan in March 2009. A few months later they had got more than 1,000 reservations for the Model S.

The next step for Tesla was to develop its battery technology further, and in order to do so it needed more resources. Therefore Tesla made a deal with Daimler for Daimler taking a 10 percent stake in Tesla. Daimler agreed to work and develop further the battery and electric vehicle systems for Tesla.

During these times Tesla also received $465 million loan from the Department of Energy, which it repaid back in 2013.

On June 29, 2010 Tesla went public with $17 per share. The total amount shares offered was 13.3. Million, and they raised $226.1 million in total. (Baer, 2014)

The delivery of Model S was postponed with one year. The original delivery of Model S was in 2011, but they started deliveries during the next year.

In 2014 Tesla announced they would open-source its patents to demonstrate its commitment to further develop the adoption of electric vehicles. This open-sourcing meant Tesla would not take any legal action against other companies using the patents for electric vehicle development and production.

In 2014, the battery factory called Gigafactory, was announced to start being built in Nevada. This huge future factory would, according to the company's website, help cut the cost of the batteries by using the most advantaged technology, reducing waste and being more efficient with the producing process. Therefore it would be possible to cut the prices of batteries by 30 % by 2020 when the factory would be fully in use.This reduction of costs of batteries would enable Tesla to sell the Model 3 at the price of $35,000.

At a company event in October 2014 Musk had good news for the public: He introduced new dual motor option for The Model S and told that all Tesla vehicles manufactured beginning October 2014 were with Autopilot hardware. At the same time Tesla did not rest with its other projects either, and in 2015 they introduced the Powerpack and Powerwall declaring "Tesla is not just an automotive company; it's an energy innovation company."

After these technological developments Tesla faced some problems with deadlines of planned launching of Model X Crossover SUV in 2013. The production got a delay of almost two years.

The problem with producing was the new complicated technology of the vehicle making it difficult to produce on a mass scale.

Tesla continued developing the Autopilot features for its vehicles, which would initially enable the vehicle drive itself. They made few time updates for these softwares during 2015-2016.

The 2016 was significant for Tesla as they introduced their first prototype of Model 3, their first mass-market car. (Hull, 2016) Succeeding to produce mass-market cars would help Tesla to become profitable, so this step towards the mass-production was a substantial move. This prototype of the first mass-market car would drive more than 215 miles per charge and go from 0 to 60 mph in less that six seconds. The planned launching date for the car was by the end of 2017 and the planned price for the car was $35,000.

In 2016 there was the first fatal accident driven with an autopilot Tesla car. Regulators started to investigate whether there was a connection between the Autopilot function of Tesla car and the fatal accident. Tesla also issued a statement with Elon Musk's condolence.

The surprising move was made in 2016 when Tesla gave a $2.6 billion bid of a solar installation company SolarCity which was $3 billion in debt and owned by Musk's cousin where Musk himself the chairman of the company. The same year was time to reveal the part two of Tesla's Master Plan. The four key goals of the plan were developing perfect solar roofs, create more affordable vehicles, develop self-driving technology to become more safe than normal manual driving, developing car sharing program making it possible for Tesla owners start making money just pressing the button on their phone app. (Thompson, 2019)

The same year 2016 was also time to buy another company, a German engineering company to help them develop automation further. For this Musk had to convince the shareholders that building the machine that made the machines was a great opportunity and future for Tesla as the German Grohmann Engineering firm was specialized in designing systems for automation of manufacturing.

This eventful year also included stepping officially into the solar business. This happened after the special meeting for shareholders where more than 85% voted in favor of the merger of Tesla and SolarCity. Due to this worth of $2 billion merger Tesla absorbed SolarCity's $3 billion in debt. (Ohnsman, 2016)

The year 2017 started with good news for Tesla as the federal government found no flaw with Tesla Autopilot and the investigation was closed. This year was time to renew the name of the brand. On February 1, 2017, Tesla Motors Inc. changed officially its name to Tesla Inc. But at this time it was not total surprise to anybody as Musk had already tweeted in February 2016 about the new domain they had bought and in July the company had shortened its website to

Tesla.com from previous teslamotors.com. This change was a a symbol being an energy company. (Thompson, 2019)

1.2. Share price development

Figure 1. Tesla 5 years share price development from April 4 2014 to April 4 2019 Source: Nasdaq

The share price of Tesla has been very volatile since going public in June 29, 2010 for share price of $ 17 per share. The stock price started to climb in 2013 reaching the first record with share price of USD 194.50 per share in September 30rd 2013. (Finance.yahoo.com, 2019) The continuous upward moving trend is due to Tesla's ability to meet and even exceed the investor's expectations. For example in 2012, Tesla delivered the model S to its first customers in California (Sharma and Rana, 2019) and revealed the prototype of Model X (Thompson, 2019).
In 2013, Tesla reported its first quarterly profit (Sharma and Rana, 2019) in October and November 2013, Tesla had three incidents where Tesla vehicles were catching fire (Shivdas, 2019). These events affected on the share price, and the prices dropped for a while. After announcing its plans to build a Gigafactory before year 2020 the share price went up again. Tesla promised this large scale factory would allow them to achieve economies in scale and minimize costs. They announced a new offering of convertible senior notes with worth between USD 1.6 to 1.85 billion to fund Gigafactory. (Tesla.com, 2019)

The price continued climbing reaching a new top on September 4, 2014 with a price of USD 286.04 (Finance.yahoo.com, 2019) The reason for the new price record may be because of good reviews they have received of their Model S (MotorTrend, 2019) and their great, fastly improving financial results. Tesla had great plans to sell 40,000 electric vehicles globally in 2014, but the guidance was reduced to 33,000 units in November 2014. (Tesla, Inc, 2019)The stock market followed this news, and causing the share price to drop (Tesla Inc, 2019). In October 2015, Tesla announced they were planning to start producing vehicles in China, and that they are negotiating with Chinese about local production. (Spring, 2015) The stock prices started to climb again.

In August 2016 Tesla made an agreement to buy SolarCity Corp for USD 2.6 billion (Bade, 2016) and market reacted to these news and the share prices dropped varying between USD180.00 and USD215.67 till the price started to rise sharply in December 2016 reaching the peak of USD 287.39 on February 14, 2017. This may have happened because of the new, interesting investment news. Tesla took over an American Samoan island of Ta'u converting it to a solar microgrid. Tesla also purchased a German company Grohmann Engineering to support their automation project. (Greiner, Sherman & Baker, 2019)The year 2017 was great for Tesla's stock market. They reached their highest price record ever made in June, 2017 at the price of USD 386.99. Tesla also joined the Fortune 500 list for the first time. (Isidore, 2017) This was based on their excellent USD 7 billion revenue made in 2016. Because sales were expected to keep growing and Musk had told to the shareholders that the company is going to start producing their first mass-market car Model 3 during the same year, Tesla had strong public support, influencing the stock prices to grow.

The shareholders has strong power to show their disappointment and this happened in July 2017 when the stock-market value dropped more than USD 12 billion from previous month record of USD 63 billion. This happened because the investors were disappointed on the sales result of Model S and Model X during the second quarter. (Ferris, 2017) Tesla's stock price has been highly volatile throughout its time as a public company. After 'July stock crash' the prices went up in August only to crash even lower in November, 2017. In March, 2018 the share price dropped over 8 % to the lowest being almost as low as a year ago on investigation of fatal crash. "We have been deeply saddened by this accident, and we have offered our full cooperation to the authorities as we work to establish the facts of the incident," Tesla said to CNBC. (Kim, 2018).Soon the stock prices recovered as Musk promised investors to increase the weekly production to the level of 6,000 Model 3s by the end of June. This was a 20% increase to the previous promise made to investors.(Isidore, 2018)

On August 7 2018 Elon Musk, the CEO of Tesla, shocked public when he tweeted taking Tesla private (Thompson, 2018).. This caused a fall in share prices which lasted till October 2018 ("Tesla, Inc. (TSLA) Interactive Stock Chart", 2019).
October 2018 was time for great news again when Tesla sold more vehicles than Mercedes-Benz in US for the first time ever. (Snider, 2018) This caused a new pike on stock prices in November 2018 at its height of USD 379.49. After November 2018 Tesla stock price trend has been downward. The price of Tesla, Inc stock was USD 273.2 on April 9,2019.

1.3.Organization

In this Organization part I will introduce Tesla's Organization, business model, strategy, and ownership structure. Innovative and competent workforce is Tesla's lifeblood to create innovative and better products than its competitors. As Tesla says, "Tesla Culture" is its greatest asset. The company names its six main components of its organizational culture, which are:

1. Move Fast

   Tesla's workers have to be efficient to meet the high production targets.

2. Do the Impossible

   Tesla strives to encourage its workers to be creative. The new ideas and problem solving are key for Tesla's future performance.

3. Constantly Innovate

   Innovation is the most important component of Tesla. The company must ensure that innovation continues in the future as well in the highly competed automobile industry.

4. Reason from "First Principles"

   Elon Musk uses this "First Principles" thinking strategy and the company also has guidelines for its workers how they are expected to think by boiling things down to the most fundamental truth and then reasoning up from there.

   https://www.hotcars.com/weird-rules-elon-musks-employees-all-have-to-follow/

5. Think Like Owners

   This encourages the workers to take responsibility and the overall performance of Tesla.

6. We are ALL IN

   This reminds that employees are a team who are working to improve the business. (Tesla.com, 2014)

In Tesla's huge, 5.3 million square meter plant in Fremont, California, works over 15 thousand full-time workers. Recently there has been discussion about the gloomy statistics of Tesla's workers work conditions. According to California Occupational Safety and Health Administration, Tesla made 54 occupational safe and healthy violations from 2014 to 2018 which is as many as the ten largest US plants combined together. (Ohnsman, 2019)

Tesla Inc sells, service and charge its electric vehicles itself. First of all, Tesla uses direct sales to sell their vehicles. This is something different compared to other car manufacturers who sell their vehicles through franchised dealerships. Tesla believes they can gain a competitive advantage by developing their product faster and providing better customer experience this way. There is no third parties between Tesla and customer making it direct communication between the company and the buyer. It is even possible to customize and buy a Tesla online making it very convenient for the customer. The second point of the business model is a great availability of service centers. These centers allow customers to charge and service their Tesla vehicles at the service centers. The customers are all the time at the heart of Tesla's business model and the third part of their business model is also made to serve their customers; the Supercharger network providing

charging stations where drivers can charge their vehicles -for free. This is made to accelerate the speed of adoption of electric vehicles. They are continuously adding new stations around the United States, Europe, and Asia. Currently Tesla has 1,441 Supercharger Stations and 12,888 Superchargers.In the U.S. one can drive from the coast to coast with Tesla by charging the car in the charging point. (Tesla.com, 2019) Vehicles are not the only product Tesla provides. They also sell components and powertrain systems to other auto manufacturers, produce selection of home batteries, solar panels, and solar roofing. (Zucchi, 2019)

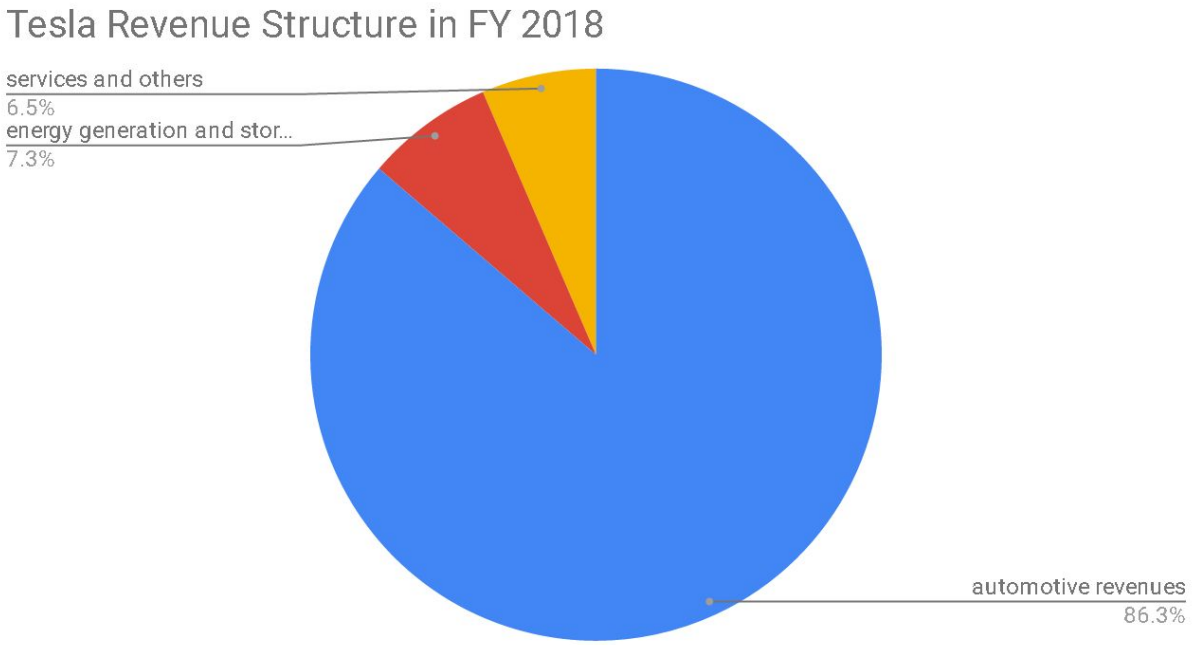

Figure 2. Tesla Inc revenue structure in the fiscal year of 2018 Source: Compiled by the author From appendix 1

On this Revenue Structure pie chart we can see that almost 90 percent of revenue comes from automotive sales and leases making it the most substantial for Tesla's earnings.

Tesla has announced two Master Plans, part 1 and 2. The latest, "Part Deux" was published on July 20, 2016. The main points of it are integrating Energy Generation and Storage, meaning to create a perfectly integrated solar-roof-battery product. Thus one does not have to order these separately as they are ordered, installed and used together with one phone app. The second point of the Master Plan part Deux is to expand their operations to cover major forms of terrestrial transport, meaning they are planning to target most of the consumer market by increasing production volume. To make this happen Tesla focuses on to creating machines that makes machines -without human workforce. The third point of the plan is autonomy. Tesla is developing hardware enabling vehicles fully self-drive themselves. Tesla has to convince the regulators to approve self-driving vehicles. They expect that approval in worldwide will require 6 billion miles on the order. The last point is sharing. This means that when self-driving are approved by regulators internationally it will be possible to call one's Tesla from everywhere. It

will make possible to earn money by having a Tesla as others would be able to use it as well. (Musk, 2019)

More than a half of owners are institutional holders with total percent of 59.68. The total number of institutional holders is 897, and the total shares held is 103,072,764 with total value of $28,472,820,327. The net activity is negative, 32,665. The top five of institutional holders consist of Baillie Gifford & Co, FMR LLC, Price T Rowe Associates Inc/Md/, Capital World Investors and public Investment Fund, in this order. (Nasdaq.com, 2019)

The two business segments Tesla operates are automotive and energy generation and storage products. The automotive business segment includes designing, developing,manufacturing, and selling the electric vehicles. The energy segment includes designing, manufacturing, instaling, and selling or leasing stationary energy storage products and solar energy systems and generating electricity by the solar energy systems and selling to the customers. (Reuters, 2019)

1.4. Automobile Industry

Tesla, Inc. operates in more than 25 US states and approximately 25 countries. They have 330 stores and service locations globally. More than 50 % of sales are in the US, more than 15 % in China, and more than 5 % in Norway. (Vault, 2019).

The main characteristics of automotive industry is that it is very capital and labor intensive. The main production costs can be divided into labor, material, and advertising costs. The automotive industry does not only include the auto manufacturing firms. The other substantial sector in the industry are auto part manufacturers, which can be further divided into original equipment manufacturers, replacement parts producers and distributors, and rubber fabricators. Still the main part of the revenue in the industry comes from selling the automotives. However, the parts market brings great additional revenue for automakers by selling the parts needed to construct the car. Additionally, globalization changes the car markets continuously. Investments and businesses in the automotive industry tend to move from the local market to the global market affecting the position of the industry. For example, nowadays it is easier than ever before to enter the market in North America.

Fleet sales are something relatively new in the automotive industry. Auto makers have been starting to make fleet sales to small businesses with discount prices enabling car makers to make high-volume sales. The other specific character for automotive industry is that the sales highly varies from quarter to quarter. Normally most automakers have the highest sales during the second quarter, and the worst sales during the fourth quarter. That makes it important to compare the sales to the same quarter during the previous year.

The automotive industry is very sensitive to the consumer preferences, and this is important to keep in mind as most of the sales comes from the consumer sales. (Investopedia, 2019)

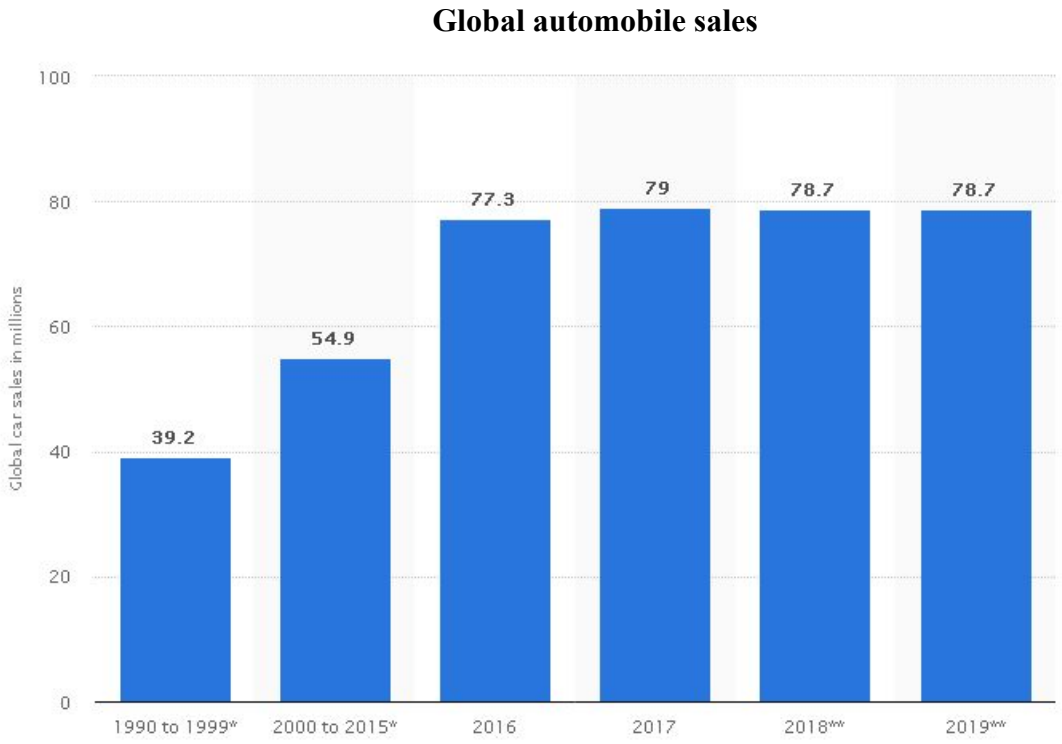

Figure 3. Global Automobile Sales from 1990-2019 (in millions. The years 2018 and 2019 are expected sales) Source: Statista

The global automotive growth rate has been fluctuating and following the global economic trends. In 2018 the sales of passenger cars decreased 0.5% compared to previous year. This decrease was for the first time since 2009 global financial crisis. (Demandt, 2018)

The first model of electric car was created already in the 1800s. This was done when Thomas Edison was developing longer living batteries for the vehicles, and created an electric car. But when the oil prices dropped in 1920, the petrol and diesel cars became popular and the electric cars became unpopular in the automotive market. (“Where is the electric car industry”, 2019)

The global electric vehicle stock of 3 million vehicles was achieved in 2017. The total sales of electric vehicles increased 56% from the year 2016. The biggest market for the electric vehicles in China with 40% of the total amount of vehicles globally. (“Global EV Outlook”, 2019)

The electric car industry has improved a lot during the recent years, The amount of electric cars on roads and the charging points available for drivers have increased a lot. For example in UK 96% of gas stations also provide a charging point for electric vehicles which will provide a fast

charge with 80 % only in 30 minutes. The distance one can drive by electric car has also improved, and nowadays one can usually drive around 320 km with a fully charged electric car.

The future prospects for electric car industry looks promising: It is expected to keep growing in the coming years. For example UK has projection to prohibit selling new petrol and diesel cars by the year 2040. The authorities have also promised that at least half of the new cars will be hybrid or electric vehicles by 2030 to reduce emissions. ("Where is the electric car industry", 2019)

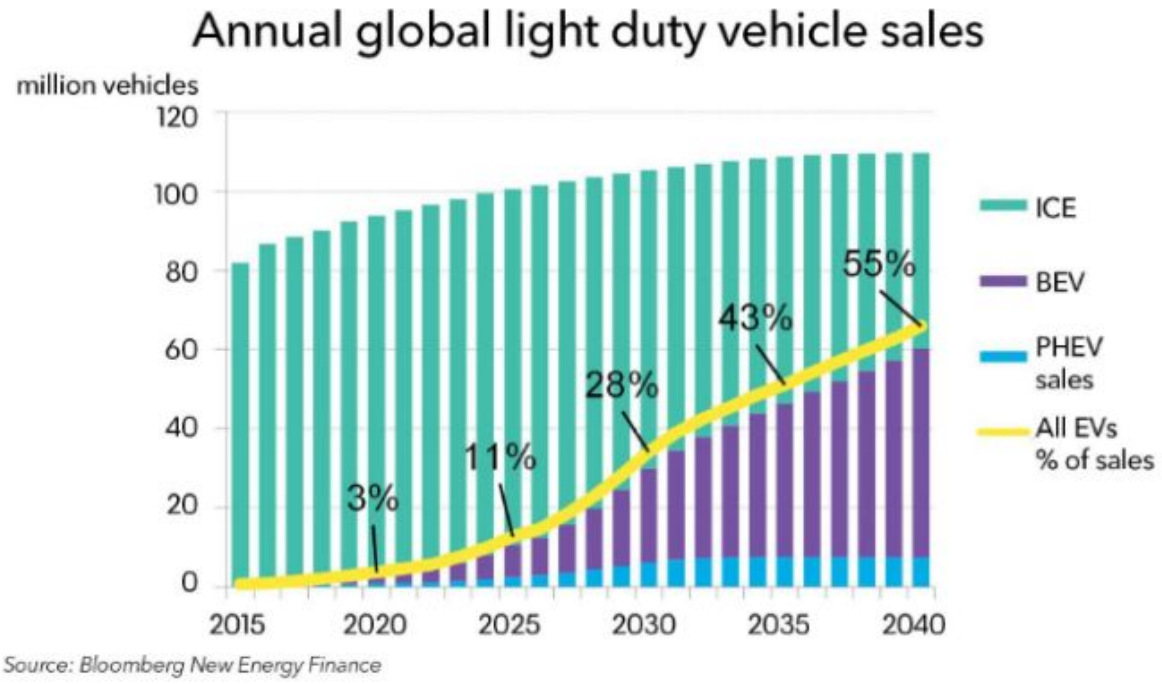

Figure 4. Forecasted annual global light duty vehicle sales in 2020-2040 (in millions) Source: Bloomberg

According to Bloomberg estimates, the electric vehicles sales will become cheaper to produce than internal combustion engine cars (ICE cars) in 2030. It is estimated that already 55 % of the global light-duty vehicles sold will be electric vehicles (EVs) in 2040. China will be the leader in this transition, and according to forecasts China will account for almost 50 % of EV market already in 2025. For Tesla it is a good thing that the expectations for electric vehicles are good, but it may be too slow transition. As Tesla's strategy seems to become a major player in the auto industry, they should fasten this electric vehicle adoption. (Electric Vehicle Outlook, 2019)

Another estimate made is made by International Energy Agency. They have made two scenarios for future electric vehicle sales.

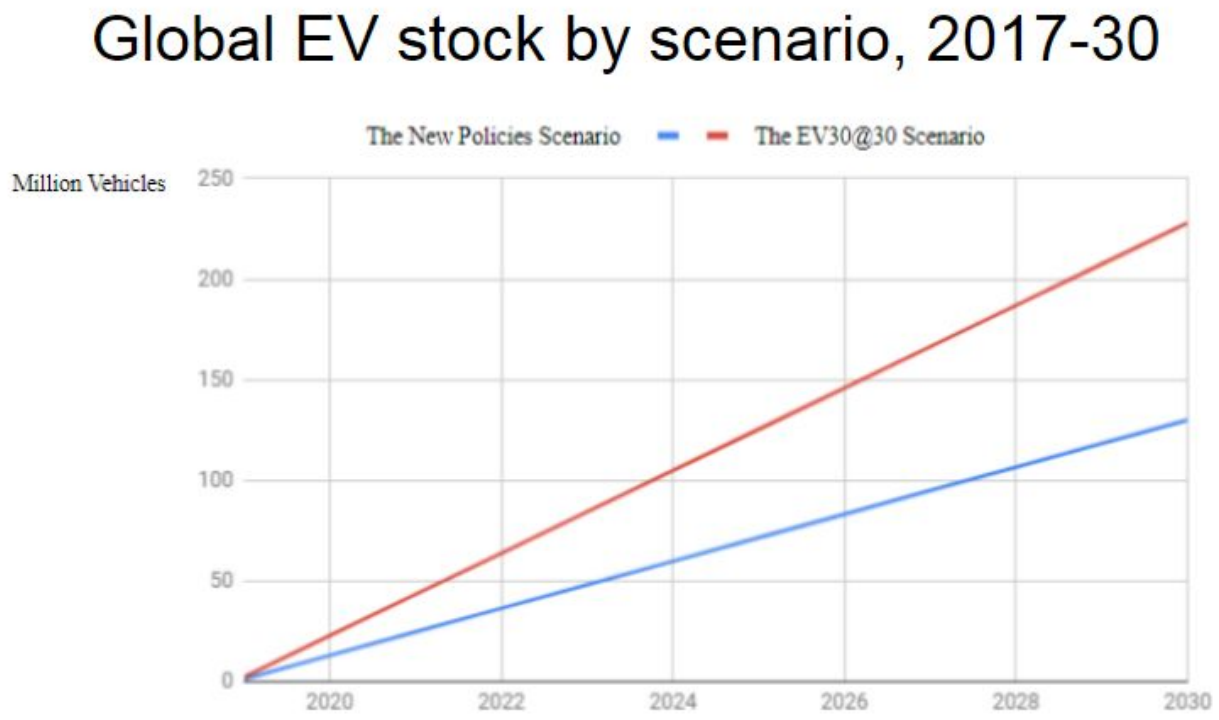

Figure 5. Forecasted global electric vehicle stock in 2017-2030 by two scenarios Source: International Energy Agency

2. STRATEGIC ANALYSIS

Strategic analysis means developing a strategy for a company by researching the business and the environmental factors affecting the business. These environments include both external and internal environments of the company. (Corporate Finance Institute, 2019) Strategic Analysis is important base for the business analysis providing understanding of Tesla's strengths, weaknesses, opportunities and threats.

2.1. PEST(EL) analysis

PEST(EL) is a tool analysing the external environment of a company. It is used for analysing the political, economic, sociocultural, technological, legal, and environmental environment of a company and how these factors influence on their operations and make them stronger in the market. The results of this analysis help managers to make better choices for the company's future such as product development or the structure of the company.(Hall, 2019)

Tesla's macroenvironment includes automotive, energy generation, and energy storage industry. In this PESTEL Analysis I will be analysing Tesla's global macro environment, indicating the possible threats and opportunities for political, economic, sociocultural, technological, environmental, and legal factors influencing on Tesla's business.

Governments have great impact on companies and industries. The opportunities for Tesla in political factors are possible incentives for electric vehicles set by authorities, new international trade agreements made, and stable political situation in major market areas. Threats are the opposite of the possibilities. Limitations on trade agreement can have serious consequences on Tesla's performance. Political instability also can harm their business.

The economic factors influencing Tesla are market trends, trade levels, and currencies. The opportunities for Tesla are decreased battery and renewable energy costs. These has direct effect on Tesla's business performance as the costs would get lower. If the economic situation gets unstable, would that be a possible threat for Tesla.

Social conditions of employees, customers and investors influence on Tesla's performance. The threats of sociocultural factors can be minimized by maximising the benefits of these groups. The sociocultural factors possibilities are awareness of ecology. The people who want to decrease their level of carbon footprint and prefer using renewable energy are also more likely to buy electric vehicles. Ecology also include responsibility with other people. By driving an

electric car, one can distribute wealth to developing countries. This in turn makes these people in developing countries wealthier so they would be able to buy Tesla car.
Tesla's numerous occupational safe and healthy violations, which I talked about in the chapter one, are threat for Tesla's success. Workers need a safe working conditions to be able to work efficiently, and the public is interested in the conditions of the employees.

Tesla's products are dependent on technological development. These developments determines how cost-efficient and effective their products are. The opportunities for Tesla are increased automation in production and products, increasing use of mobile services, and frequently changing technology. The last one can also be considered as threat if Tesla does not manage to stay in development and their products become obsolete too fast. The increasing use of mobile services means the possibility to integrate into automotives and energy products. (Kissinger, 2019)
What can surprise everybody is that Tesla's real future possibility can be instead of automobile industry the battery manufacturing, which is said to become on of the most important industries in the world. The company who succeeds to dominate it will have an incredible profit opportunities. (Dans, 2019)

The ecological trends can have a great impact on Tesla's performance. These trends influence for example on the availability of materials used during the production. The opportunities for Tesla are: Climate change, extended environmental programs, and rising waste disposal standards. These make it easier to promote ecological cars, batteries and solar panels. These factors are great opportunity for Tesla to grow their business. The threats are the opposite. If consumers get tired of continuous talk of climate change, they may stop caring about it anymore.

Laws and restrictions set frames for decisions made in companies. The opportunities for Tesla are expanding the protection of their patents, increased regulations on energy consumption levels, dealership sales regulations. The last one can also be considered as a threat if some country does not allow direct sales requiring transactions with customers. In overall this sections indicates growth opportunities for Tesla.

The company has good possibilities to grow in the global market. However, Tesla has to constantly develop its global macro environment factors mentioned earlier.These factors affect Tesla's performance in all three industries it is operating. They must be aware what is happening in industry, and compare themselves to its peers.
As there are opportunities for growth, Tesla has a good potential on global operations. This can be done by marketing more aggressively.Also the overseas market share should be increased by marketing more aggressively.

2.2. Porter's Five Forces

Porter's Five Forces identifies and analyzes the five main forces shaping every industry. It also determines the strengths and weaknesses of an industry. As this model is used to understand the structure of an industry and thus to determine the strategy of a company, it can be used to analyse profitability and attractiveness of a company, which makes this model important tool for business analysis. The five forces shaping every industry are 1. Competition in the industry, 2. Potential of new entrants into the industry, 3. Power of suppliers, 4. Power of customers, 5. Threat of substitute products. By understanding these five forces it is possible to make needed adjustments to the strategy of a company to become a more profitable corporation. (Lumby, 1995) The only weak force in this Five Forces analysis is a threat of new entrants, as a huge amount of capital is required to set up a new automotive manufacturing company. (Kissinger, 2019)

By using the Five Forces Analysis model developed by Michael Porter we can define these external factors which are notable in the automobile industry as well as in the energy industry. Tesla is one of the biggest companies in the electric vehicle market, and in order to increase its market share to become a mass producing electric vehicle company it must focus on these external factors to meet its targets. Mass producing automakers are highly competitive rivals with strong, long history. These automakers include i.e. General Motors Company (founded 1908), Ford Motor Company (founded 1903), Volkswagen (founded 1937), and Toyota Motor Corporation (founded 1937).

There are lot of external factors influencing in companies operating in global automotive industry. The competition in the industry is high. Customers have strong power deciding which car they want to buy. Suppliers have moderate force bargaining. The threat of substitute is also quite strong as not only choosing between electric or ordinary cars, a potential customer can also choose between public transportation, bicycle, or using a taxi. (Kissinger, 2019)

2.3. Swot Analysis

Tesla's strength is its unique idea it wants to offer: luxurious electric vehicles which can also be affordable. Tesla is highly innovative company, just to mention as an example that Tesla was the first company ever producing fully electric sports vehicle. Tesla's all three product lines include highly advanced technology, which is also a competitive advantage. The other difference with Tesla is that they sell their cars themselves. This enables Tesla to reach directly its customers making the process more efficient. (Tesla Inc, 2019)

The weakness of Tesla are the car prices which are still too high for many Tesla's supporters. As there are many people supporting Tesla and would like to buy the vehicle, they are not able to do so as they simply cannot afford it. The Tesla Model S starts with the price tag of $76,000 and the Tesla model x with the price of $82,000. The more affordable model, Model 3 starts from $35,000. (Tesla, 2019) Even the Model 3 is affordable price for middle class people, there is a high risk for Tesla with this pricing. The fact is that it will be difficult to make profit with such pricing. For example UBS believes the break even point is USD 51,250. So if Tesla will not figure out how to make vehicles more effectively, they will be facing big losses.(Cohan, 2017)

Tesla's operations depends on other people's money. There has not been a profitable year in Tesla's history, and the company which was founded 15 years ago is still making heavy investments requiring significant loans and investments. The CEO and one of the founders of the company, Elon Musk, is a charismatic and controversial controversial figure whos sayings affect the whole company's future and profitability. What Musk says publically can have an instant influence on the stock prices (Ferris, 2019). This can also be considered as a threat and possibility for the company.

The most significant opportunity for Tesla is to become a mass production car maker. There will be increase in demand as there is more demand than there is supply for affordable Model 3. (Marshall, Davies & Stockton, 2019) Until April 9, 2019 Tesla has produced 226,517 Model 3s in total, and currently producing approximately 5,540 cars weekly. (Bloomberg, 2019).
The other opportunity is the autonomous driving that Tesla is developing. If they will manage to do that, it would change the whole industry and the future of transportation.

The main threat is the competition which will get tougher in the future when automaker giants will release their more advanced electric cars. There are already more affordable electric vehicles available, for example from Nissan and Ford, which are offering electric vehicles with the price of approximately USD 30,000 (Nissan USA,2019) and (Ford Motors, 2019). In near future the competition is only going to speed up as Toyota, for instance, will offer over ten pure battery electric car models by 2020 (Smith, 2019).
China who is showing a green light for Tesla's new Gigafactory in Shanghai, China, is know for its ability to learn by observing and then doing the same but more effectively. The threat here is that Tesla starts producing vehicles in China, and Chinese learn the methods and do the same by their local firms.

It seems that Tesla is trying to do the same than tech startups like Facebook or Amazon, operating on digital platforms. These companies have managed to grow huge billion-dollar corporations by going to IPO. When they become big enough they get everything, while others get nothing. This "winner takes all" (Naughton, 2019) describes today's predatory capitalism (Akbar, 2019), and this is where Tesla is also trying to get, to grow big and fast. The only difference is that no one has become a "Silicon Valley's unicorn" (Naughton, 2019) in the real world. All these overvalued tech companies operate online, whereas Tesla is a manufacturing

company which must overcome the possible difficulties in manufacturing processes, and compete with mature car makers with long history.

Tesla's ultimate goal is to make transportation sustainable in an interesting way, and as soon as possible. Tesla is, among other innovative companies, making the world better place to live in. But in order to achieve their goals they will need public support and willingness to adapt into these changes.

3. FINANCIAL STATEMENT ANALYSIS

I will make financial analysis of Tesla Inc by using its financial data to assess the performance of Tesla. In the profitability analysis I will analyse the income statements by using different measures, such as Return on Invested Capital, Profit Margin, and Working Capital Turnover. I will also analyse the company's liquidity risk. There are large amount of information available about financial statements of a company, and many companies also publish additional notes for interested users. The financial reporting system is complex with detailed accounting principles. If financial statement analysis was simple, it would be possible to easily compare the financial situation of Tesla among its rivals. But as financial reporting is complex and not perfect, it is not possible to simply compare Tesla's financial performance by looking only the bottom lines of financial reporting. But financial reports include data that can be used to analyse the financial situation of a company. For example financial ratios are good tool to get better understanding of a financial situation by making Tesla's performance more comparable. (White, 1997)
Financial statement analysis helps also to forecast future cash flows, and see how the company has performed in the past. For example, Tesla's stock price has been fluctuating between USD 151.04 (on February 8, 2016) to USD 383.45 (on June 19, 2017) during the last four years, meaning approximately 61 percent difference in the share price. Also the revenue has changed a lot during the last four years by increasing approximately 81 per cent from year 2015 to 2018. These historical figures helps estimating the future cash flows. As automotive industry is a mature industry, it is possible to forecast the future growth by analysing the financial statements of Tesla and its rivals.

The financial statement analysis of Tesla will be compared to its main rivals, based on the market they are operating. Because of Tesla's huge growth rate during the years,the historical financial statement analysis will be done based on the last five years' annual reports, from 2014 to 2018.

In the financial analysis part I will be analysing Tesla by comparing its financial ratios and financial performance to its peers. The major competitors chosen for this comparison are Ford Motor Company, General Motors, Honda Motors, and Toyota Motor Corp. These are chosen as they are well-known, traditional auto companies. Even they are traditional auto companies they are continually developing and increasing their offers for both hybrid gasoline-electric vehicles and pure electric vehicles. ("Who are Tesla's, 2019) The US News issued in 2018 the list of top 8 electric vehicles where Tesla was holding the second and fourth places:

1. Chevrolet Volt EV
2. Tesla Model S
3. Hyundai Ioniq EV

4. Tesla Model 3
5. Volkswagen e-Golf
6. Nissan Leaf
7. BMW i3
8. Kia Soul EV

(Vincent, 2018)

3.1. Historical Performance

As said earlier, Tesla's financial performance will be compared to its main competitors. All the ratios will be based on the whole year performance of a company.
For shareholders an important ratio is Return on Equity (ROE) as it provides information how well the company is able to make profit from equity capital ("Return on Equity (ROE) - Formula, Examples and Guide to ROE", 2019).

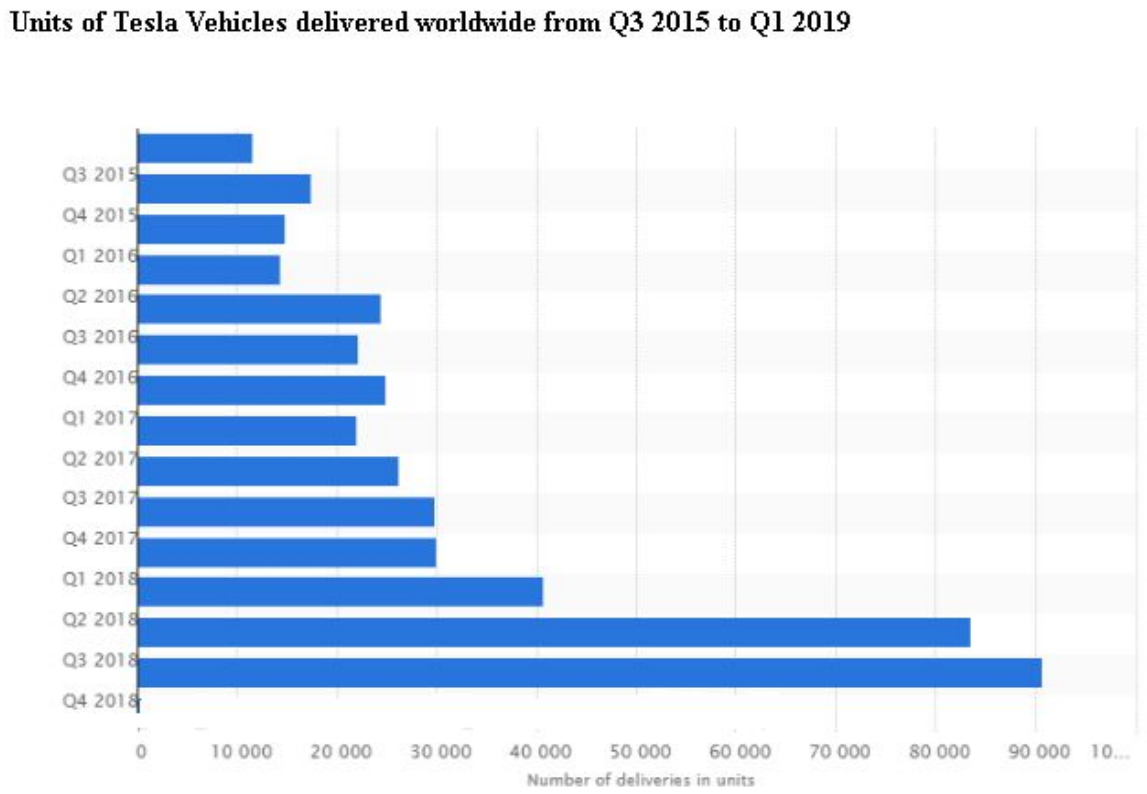

Figure 6. Units of Tesla Vehicles Delivered Worldwide from Q3 2015 to Q4 2018 Source: Statista

On the graph above we can see that the number of vehicles delivered have been growing during the past years, and I expect the trend to continue. The sale jump from 103,020 vehicles delivered in 2017 to 244,920 2018 was massive, and I do not expect the sales continue growing this fast in the future.

3.2. Profitability ratios

Profitability ratios are ratios used to assess how well the company is able to generate profit. In most of the cases the higher the value of a profitability ratio compared to the competitors, the better. The profitability ratios chosen are the return on invested capital, profit margin and return on equity, which will be covered in this chapter.

3.2.1. Return on invested capital

The return on invested capital is ratio showing the percentage company has earned on its invested capital during a year. Invested capital is the total stockholders' equity, long-term debt and capital lease obligations plus short-term debt and capital lease obligations. In other words ROIC indicates how well a company manages to generate profit on its capital. The net income of a company is in the income statement and the invested capital components are in the balance sheet. The ROIC is calculated based on the calendar year ended data.(Kenton, 2019)

ROIC is important ratio as it tells how much investors earns with their invested capital. ROIC is also a useful tool as one can measure a company's competitiveness by comparing ROIC to its competitors. The growth can also be evaluated by looking at the company's ROIC. When investments make excess returns the capital is creating value and these returns can be invested again in the company. (Damodaran, n.d.)

ROIC is a percentage a company earns on the invested capital during a year. The formula is net operating profit after tax (NOPAT) divided by average invested capital. The result is multiplied by 100 to get a percentage. Invested capital means the total stockholders' equity, long-term and short-term debt, and long-term and short-term capital lease obligation. ROIC indicates how much company makes profit based on its capital. The bigger the percentage, the more the company is making profit on its capital. The net income is in the income statement and the parts of the company's invested capital are in the balance sheet. ("Morningstar Investing", 2019)

$$\text{ROIC} = \frac{\text{NOPAT}}{\text{Invested Capital}}$$

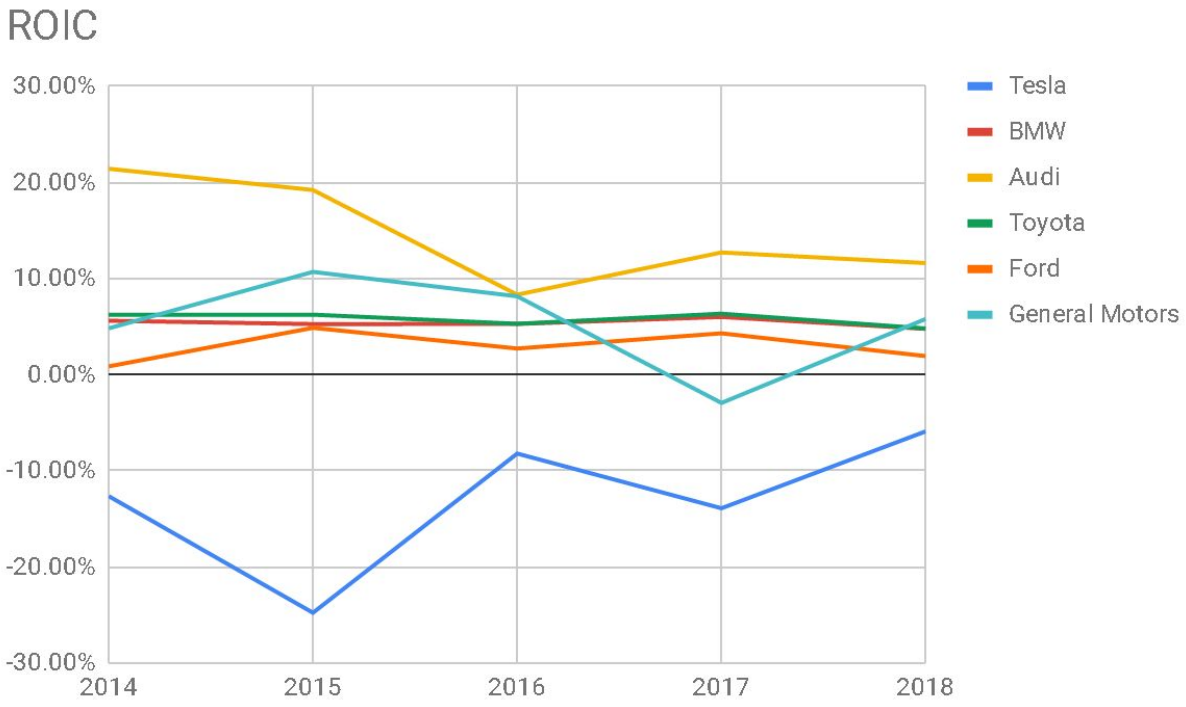

Figure 7. Tesla and its peers' return on invested capital in 2014-2018 Source: Compiled by the author's calculations and prepared by the author based on the appendices 1-18

Tesla has had slightly upward trend in the past with its ROIC although it is still negative meaning it does not create any value for its invested capital. Tesla's main peers have had a positive return on invested capital except General Motors in year 2017 when its net income was exceptionally negative.

3.2.2. Profit Margin

Profit margin is a profitability ratio which measures how profitable the business is relative to its revenues. In other words it shows how many percentage of sales it makes profit. The ratio is a well-known tool to assess the profitability of companies of all sizes used by different interest groups. (Chen, 2018) The formula for the profit margin is

$$\text{Profit Margin Ratio} = \frac{\text{Net Income}}{\text{Net Sales}}$$

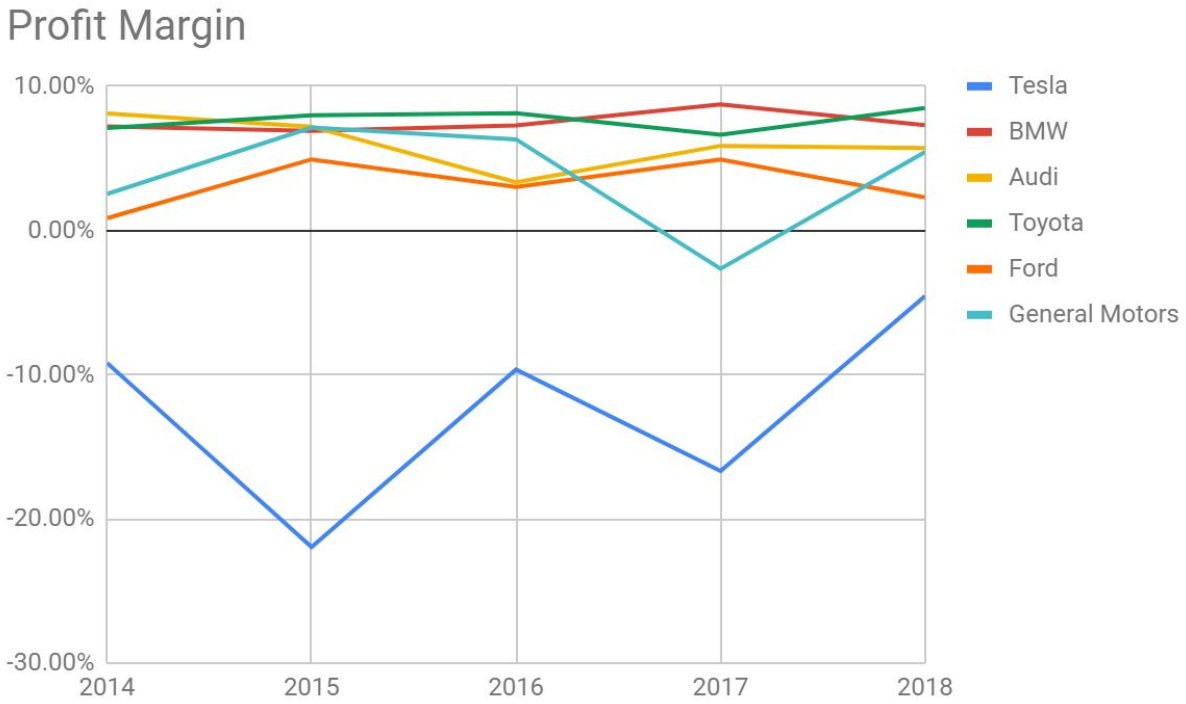

Figure 8. Tesla's and its peers' profit margins in 2014-2018 Source: Compiled by the author's calculations and prepared by the author based on the appendices

Tesla's profit margin has been fluctuating much more than its peers during the last years. While its competitors have mainly remained profitable, Tesla has been unprofitable every year. Tesla is a growing company and trying to step into mass market by providing more affordable vehicles.From 2017 Tesla's profit margin has started to climb and has reached its best result with percentage of -4.55% in the fiscal year 2018.

3.2.3. Return on equity

Return on equity is a ratio showing how well the assets are used to create profit. It is a very useful tool for investors to assess how well their equity is utilized and how well the management of the company is doing their work. It is also a simply to calculate which makes it convenient to use. The formula for ROE is

$$\text{Return on Equity} = \frac{\text{Net Income}}{\text{Average Shareholders' Equity}}$$

Here the average shareholders' equity is an average equity of a fiscal year (average of the beginning and ending balance). (Hargrave, 2019)

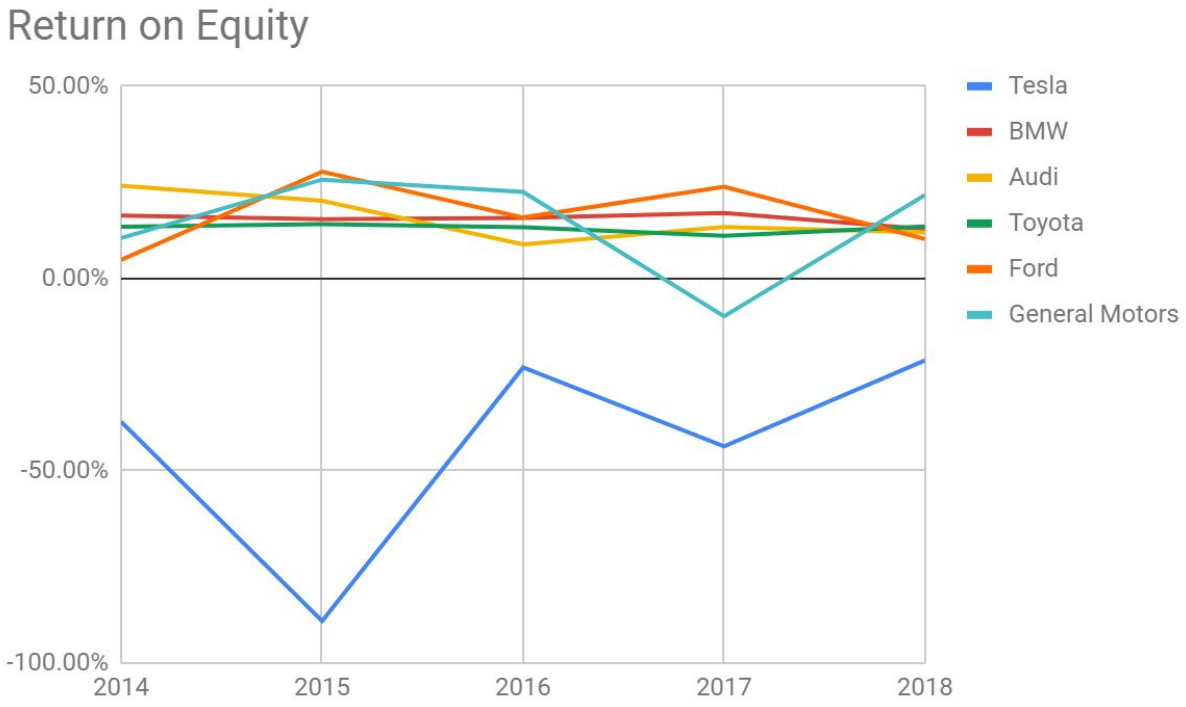

Figure 9. Tesla's and its peers' returns on equity in 2014-2018 Source: Compiled by the author's calculations and prepared by the author based on the appendices

On the graph above we can see that Tesla is the only automobile company in this comparison which has been unprofitable throughout the last five years and thus not bringing any return on its shareholders.All the other compared automotive firms have brought returns except General Motors in the year 2017.

3.3. Liquidity Ratios

Liquidity risk means the risk that some financial asset, security or commodity cannot be bought or sold quickly enough during a given time period which in turn leads to losses. (Bird & Kenton, 2019) Examples of possible liquidity risks are being not able to meet short-term debt because a huge losses during the operations, or not being able to meet enough funding during a given period of time. This is a matter especially for startup fund based companies which have a risk of break-even. The liquidity risk of a company can be measured by using different ratios. ("Liquidity Risk, 2019) The ratios measuring the liquidity risk can be divided into ratios that measure a company's ability to pay short-term obligations and the ones that measure long-term obligations. The ratios measuring a firm's ability to meet its short-term term obligations used in this thesis will be Current Ratio, Quick Ratio and Working Capital Turnover. Long-term liquidity risk measures a firm's ability to meet its long-term debt and other obligations. When the amount of debt increases changing the capital structure, the risk of firm's ability not to pay its long-term obligations increases. Thus, the risk of bankruptcy increases, and the incremental costs

of borrowing are also possibly increasing. ("Long Term Liquidity Risk", n.d.) The ratios I will use are the Debt-to-Equity Ratio and the Interest Coverage.

3.3.1. Working capital turnover

Working capital turnover shows how company utilizes its working capital to make revenue. The higher the ratio, the better the company utilizes its short term assets and liabilities. If the ratio is low, it may mean that company may have too much bad debt or obsolete inventory.

The formula for Working Capital Turnover is net sales divided by the average working capital: (Kenton, 2019)

$$\text{Working Capital Turnover} = \frac{\text{Net annual sales}}{\text{Average working capital}}$$

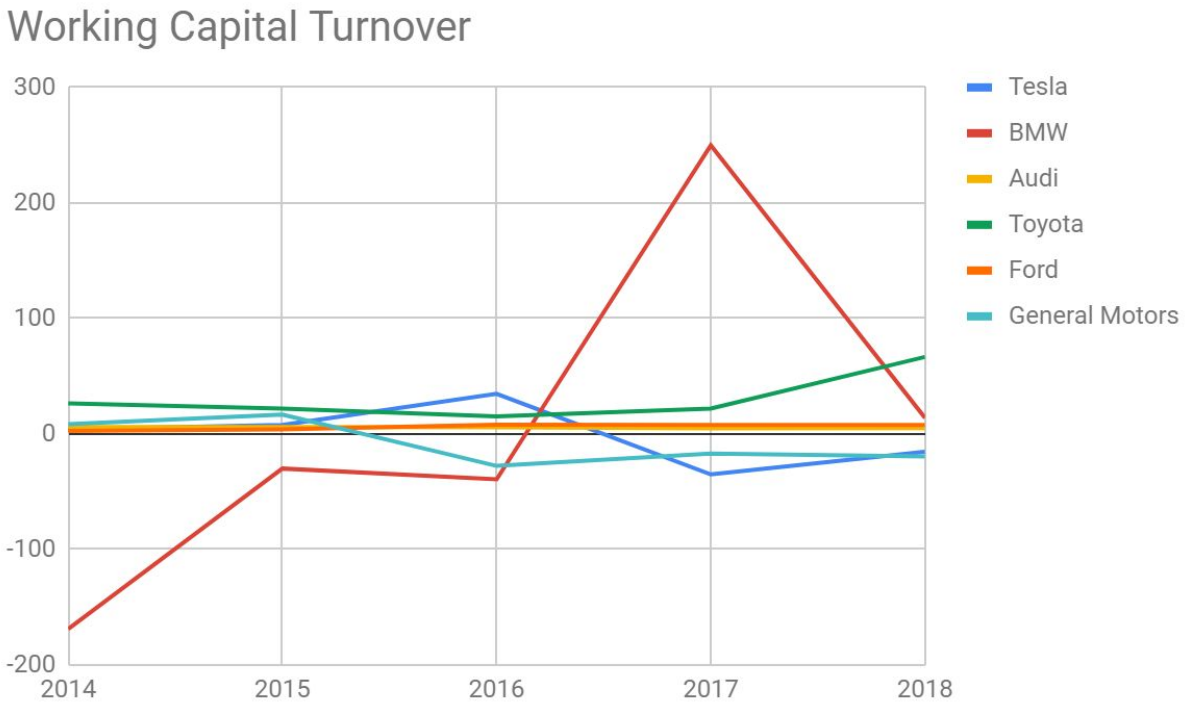

Figure 10. Tesla's and its peers' working capital turnovers in 2014-2018 Source: Compiled by the author's calculations and prepared by the author based on the appendices

In the years 2014 to 2018 Tesla's turnover ratio has been varying above and below zero. Working capital turnover has been varying a lot in the industry during the last five years. Tesla's working capital turnover has not been the most extreme one; BMW's ratio has varied between -168.82 to 249.85, which is ~ 419 % difference.Tesla's ratio has been at its best in 2016 when it was 34.67, and its worst in 2017, with a ratio of -35.03.

3.3.2. Current ratio

Current Ratio measures a firm's ability to meet its short-term obligations within a year. It indicates how a firm can maximize its current assets to pay its current debt and other obligations.

The formula for the current ratio is the current assets divided by the current liabilities: (Kenton, 2019)

$$\text{Current Ratio} = \frac{\text{Current assets}}{\text{Current liabilities}}$$

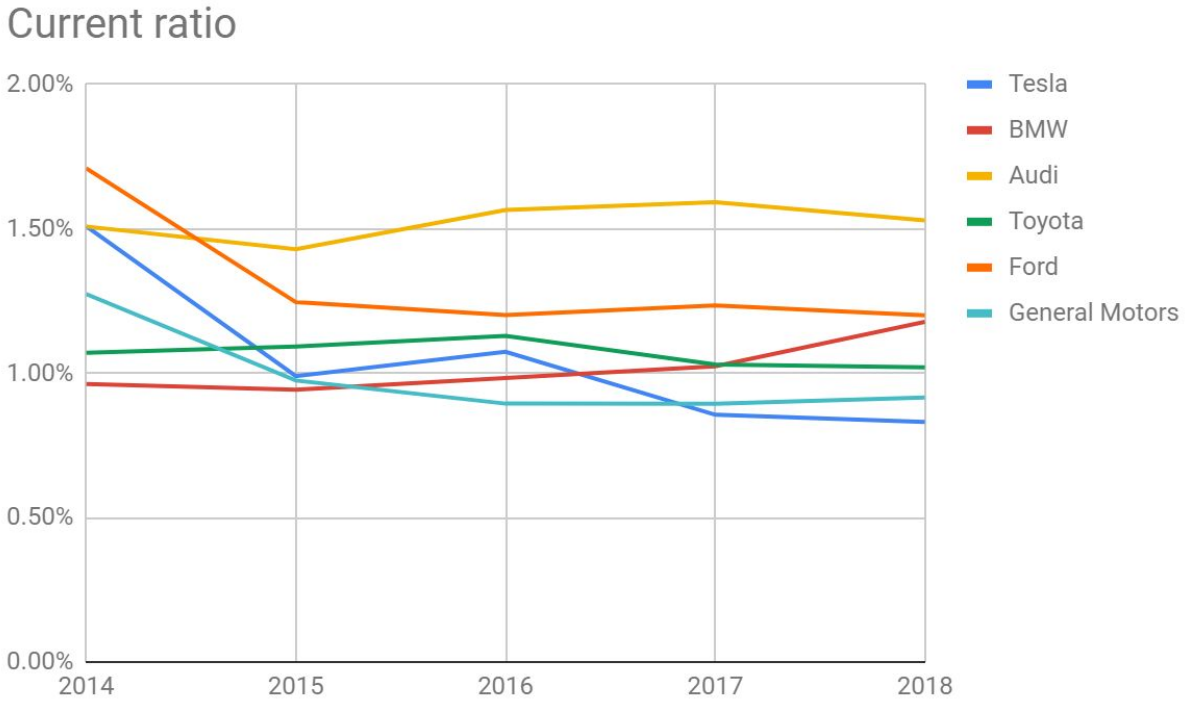

Figure 11. Tesla's and its peers' current ratios in 2014-2018 Source: Compiled by the author's calculations and prepared by the author based on the appendices

As we can see, Tesla has relatively low current ratio, meaning the company may have problems paying its current liabilities. Low current ratio, however, does not mean a serious problem. If Tesla has strong long-term outlook, it may fund its current obligations by borrowing money. (Kenton, 2019)

3.3.3. Quick ratio

Quick ratio is used to measure how well the company is able to pay its short-term liabilities with the most liquid assets. It is easy to calculate and thus a quick measure.(Kenton, 2019)

The formula for the quick ratio is:

$$\text{Quick ratio} = \frac{(\text{Current assets} - \text{inventory} - \text{prepaid expenses})}{\text{Current liabilities}}$$

To compare Tesla's current ratio with its peers we can see that Tesla falls into quite low in the industry's sector distribution:

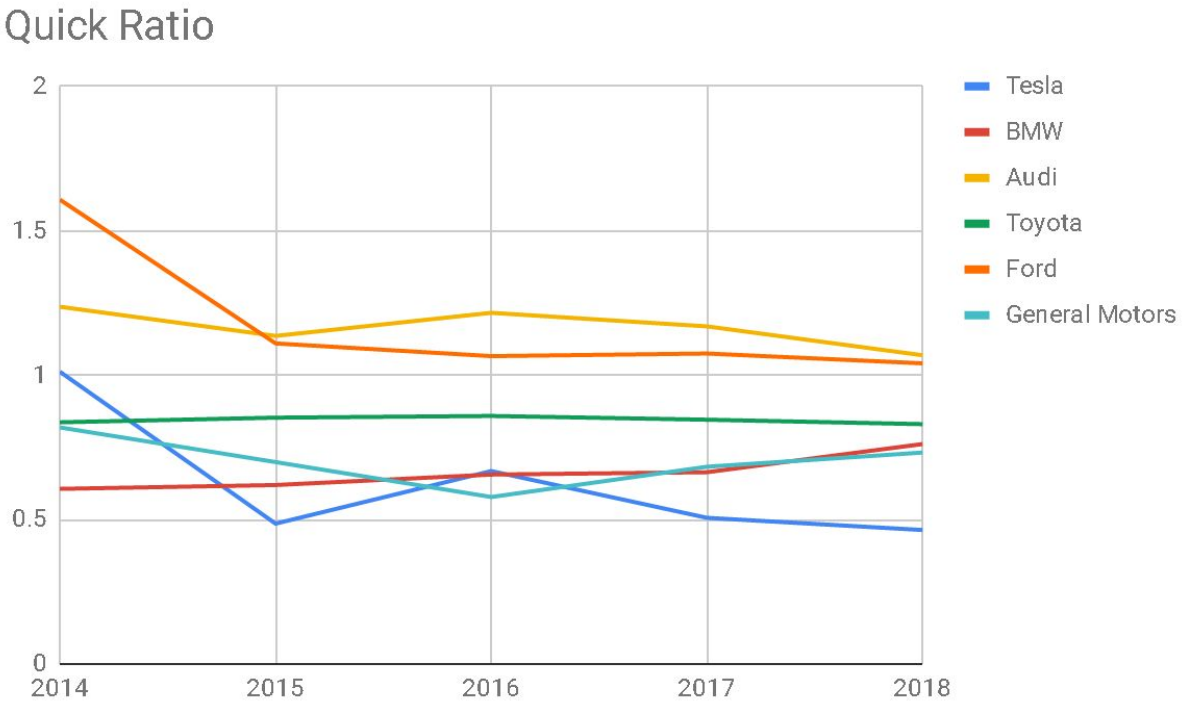

Figure 12. Tesla's and its peers' quick ratios in 2014-2018 Source: Compiled by the author's calculations and prepared by the author based on the appendices

Tesla's liquidity situation is not as good as its peers. Especially Audi and Ford had had throughout the last five years a positive quick ratio indicating a good current financial health.

3.4. Debt-to-Equity Ratio

Debt-to-Equity Ratio shows the company's leverage. It tells what is the degree of financing operations with debt and the degree of financing operations with own capital. It is simple to calculate as the formula is total liabilities divided by total shareholders' equity: (Kenton, 2019)

$$\text{Debt/Equity} = \frac{\text{Total Liabilities}}{\text{Total Shareholders' Equity}}$$

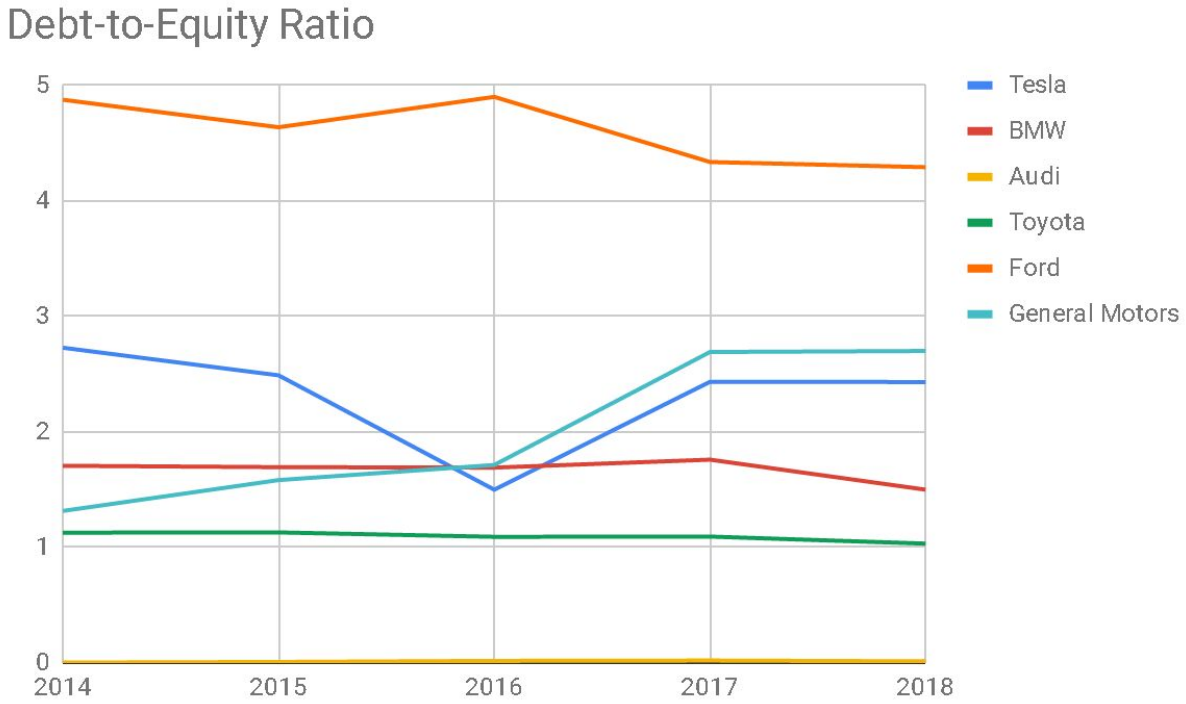

Figure 13. Tesla's and its peers' debt-to-equity ratios in 2014-2018 Source: Compiled by the author's calculations and prepared by the author based on the appendices

Tesla's Current portion of long-term debt was USD 2.568 B in the year ended 2018. The Long-term debt & capital lease obligation was USD 9.404 B in the same year. The total stockholders equity was USD 4.924 B. Tesla issues continuously new debt. During the past 3 years, it issued USD 5.2 B of debt in total. However, its debt-to-equity ratio is not the highest among the compared firms. Audi AG has least debt. For example, in the year ended 2018 the company had only USD 362.91 M of Long-term debt & capital lease obligation.

3.5. Interest Coverage

Interest Coverage ratio shows the company's ability to pay interest on the outstanding debt. It determines the relation of firm's current earnings to its current interest by measuring how many times the earnings covers the interest. The formula is earnings before interest and taxes (EBIT) divided by the interest expense: (Kenton, 2019)

$$\text{Interest coverage ratio} = \frac{\text{EBIT}}{\text{Interest expense}}$$

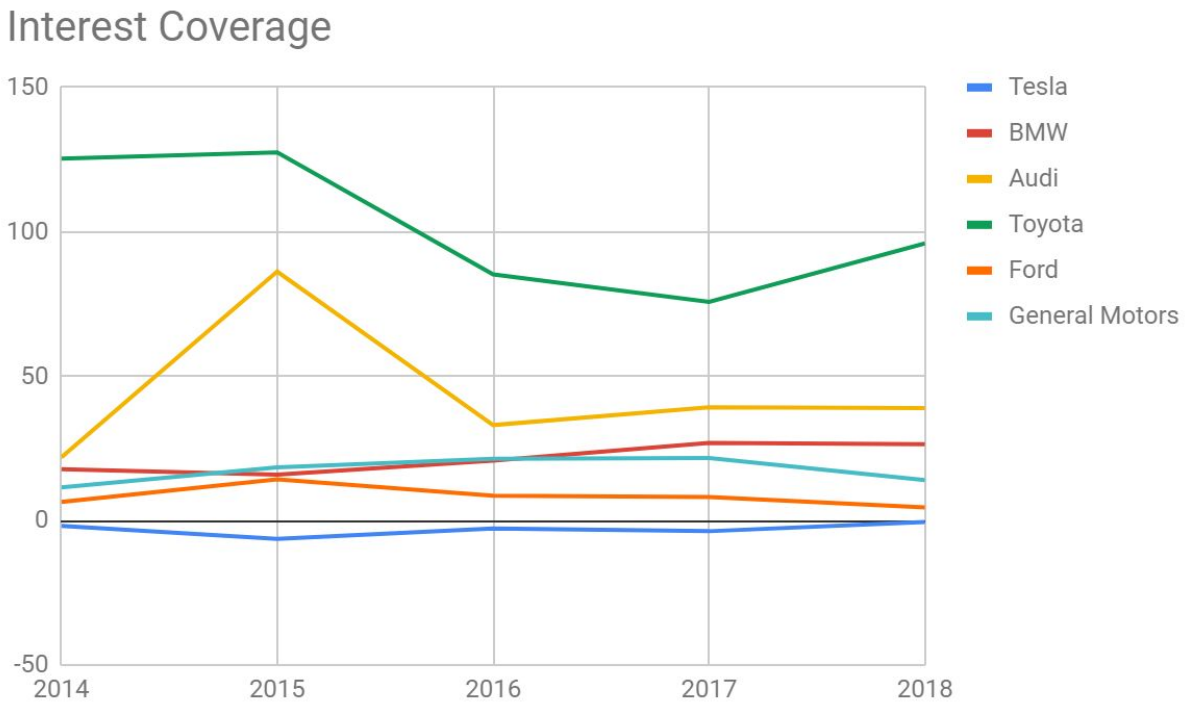

Figure 14. Tesla's and its peers' interest coverages in 2014-2018 Source: Compiled by the author's calculations and prepared by the author based on the appendices

As we can see below, Tesla has weak interest coverage as its earnings do not cover interest at any times indicating the financial strength is weak. The main competitors have had positive interest coverage ratio throughout the last five years.

CONCLUSION

In this thesis I wanted to determine Tesla's value by analysing the actual business and company's financial position. As Tesla is a young, innovative and fast-growing company, the task was demanding, but the results were straightforward: The performance is not sustainable and thus the share price overvalued. As Tesla has not have any profitable year yet, their success depends on future growth. For this they need heavy investments, as currently they are making loss.The reason why investors are willing to pay this overvalued price is that they are waiting the company to take over the auto-industry and become a mainstream automobile company. This would allow them to gain all the returns exclusively. But the risk is high as Tesla's peers are mature auto manufacturing companies who are also stepping into electric vehicle industry with strong development teams. To become a mainstream auto manufacturer Tesla should be able to provide something no one else can, and be better than others. Currently they do not have anything significantly better to provide. Tesla share price has been highly volatile throughout its history as a public company. The technical development has not been straightforward as there has been struggles delivering vehicles on time, reaching the target production rate and developing autonomous vehicles and automated production. Elon Musk is also known for his exaggerated promises for shareholders during the years.
The electric car industry is a growing industry, and because of growing concern about the climate change, there are expectations that politics begin to favor electric vehicles more and more.

Tesla has many risks to face. If they will not manage to cut the production costs or meet the production targets, they will not be able to start mass production. People are not so adaptable and not willing to change their car brand so easily. Not to mention about the mature car makers who has been on the industry. They are also developing hybrid and electric vehicles. And what comes to Tesla's China project, China is known for its ability to easily learn and start doing things themselves. There is a risk that China will just learn from Tesla and then do everything by their local companies.

Tesla has had its great moments, such as having globally the top-selling electric vehicle, Model S in 2018. But these sales spikes will not be enough to make Tesla a major player in the industry and thus become a profitable enterprise. To become a major player Tesla needs something they are remarkable better than others. Till now they have not succeeded to find this.

In the chapter of historical performance I found out that Tesla's ROIC was highly volatile compared to its peers. Tesla had both highest and lowest ROIC compared to its peers. During the last five years, Tesla has been unprofitable. Its peers have had relatively stable profitability rate, following the economic trends. Tesla's capital turnover has not been as volatile than other ratios, and in 2015-2016 the company had a strong capital turnover compared to its peers. Tesla's return

on equity is strongly negative while its peers have mostly had positive ROE during the past five years. Tesla should also improve its short-term debt ratio as its quite weak. Tesla's long-term Debt-to-Equity ratio is around average compared to its peers.Tesla's interest coverage is weak, and it has been below zero throughout the last five years while its peers' interest coverage ratios have been above zero all the time. This indicates Tesla does not have enough earnings to cover its interest payments, and it need continuously more fundings.There has not been prominent improvement either on this ratio. These ratios indicate Tesla has to become more efficient by reducing costs and increasing capability to produce vehicles, create something that is better than other car makers can provide and support public attitudes towards green energy. To conclude, one can say Tesla is way too over-valuated, but on the other hand, there is a chance that Tesla will take everything. And when it takes everything, it is investor's time to celebrate.

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APPENDICES

Appendix 1. Tesla Inc Annual Income Statement 2014-2018

Fiscal year ends in December USD in Million except per share data	2014-12	2015-12	2016-12	2017-12	2018-12
Revenue	3,198	4,046	7,000	11,759	21,461
Cost of revenue	2,317	3,123	5,401	9,536	17,419
Gross profit	882	924	1,599	2,222	4,042
▼ Operating expenses					
Research and developme...	465	718	834	1,378	1,460
Sales, General and adm...	604	922	1,432	2,477	2,834
Restructuring, merger ...	—	—	—	—	135
Other operating expens...	—	—	—	—	(135)
Total operating expens...	**1,068**	**1,640**	**2,267**	**3,855**	**4,295**
Operating income	(187)	(717)	(667)	(1,632)	(253)
Interest Expense	101	119	199	471	663
Other income (expense)	3	(40)	120	(106)	(89)
Income before taxes	(285)	(876)	(746)	(2,209)	(1,005)
Provision for income t...	9	13	27	32	58
Net income from contin...	(294)	(889)	(773)	(2,241)	(1,063)
Other	—	—	98	279	86
Net income	(294)	(889)	(675)	(1,961)	(976)
Net income available t...	(294)	(889)	(675)	(1,961)	(976)
Earnings per share					
Basic	(2.36)	(6.93)	(4.68)	(11.83)	(5.72)
Diluted	(2.36)	(6.93)	(4.68)	(11.83)	(5.72)
Weighted average share...					
Basic	125	128	144	166	171
Diluted	125	128	144	166	171
EBITDA	48	(334)	400	(102)	1,559

Source: Morningstar

Appendix 2. Tesla Inc Annual Balance Sheet 2014-2018

Fiscal year ends in December USD in Million except per share data	2014-12	2015-12	2016-12	2017-12	2018-12
▼ Assets					
▼ Current assets					
▼ Cash					
Cash and cash equivale...	1,906	1,197	3,393	3,368	3,686
Total cash	**1,906**	**1,197**	**3,393**	**3,368**	**3,686**
Receivables	227	169	499	515	949
Inventories	954	1,278	2,067	2,264	3,113
Prepaid expenses	95	125	194	268	366
Other current assets	18	23	106	155	193
Total current assets	**3,199**	**2,792**	**6,260**	**6,571**	**8,306**
▼ Non-current assets					
▼ Property, plant and eq...					
Gross property, plant ...	2,889	5,766	16,055	22,436	22,886
Accumulated Depreciati...	(293)	(571)	(1,018)	(1,944)	(3,195)
Net property, plant an...	**2,596**	**5,195**	**15,037**	**20,492**	**19,691**
Goodwill	—	—	—	60	68
Intangible assets	—	—	376	362	282
Other long-term assets	55	106	991	1,171	1,391
Total non-current asse...	**2,651**	**5,301**	**16,404**	**22,085**	**21,433**
Total assets	**5,849**	**8,092**	**22,664**	**28,655**	**29,740**

▼ Liabilities and stockh...					
▼ Liabilities					
▼ Current liabilities					
Short-term debt	602	633	1,150	897	2,568
Capital leases	10	—	—	—	—
Accounts payable	778	916	1,860	2,390	3,404
Taxes payable	71	101	153	186	349
Accrued liabilities	173	322	1,005	1,257	1,122
Deferred revenues	449	707	1,427	1,869	1,423
Other current liabilit...	25	137	232	1,076	1,127
Total current liabilit...	**2,107**	**2,816**	**5,827**	**7,675**	**9,992**
▼ Non-current liabilitie...					
Long-term debt	1,865	2,082	5,978	9,418	9,404
Capital leases	12	—	—	—	—
Deferred revenues	292	446	852	1,178	991
Minority interest	—	—	785	997	834
Other long-term liabil...	661	1,659	4,469	5,150	3,595
Total non-current liab...	**2,830**	**4,187**	**12,084**	**16,743**	**14,824**
Total liabilities	**4,938**	**7,004**	**17,911**	**24,418**	**24,816**
▼ Stockholders' equity					
Common stock	0	0	0	0	0
Additional paid-in cap...	2,345	3,415	7,774	9,178	10,249
Retained earnings	(1,434)	(2,322)	(2,997)	(4,974)	(5,318)
Accumulated other comp...	—	(4)	(24)	33	(8)
Total stockholders' eq...	**912**	**1,089**	**4,753**	**4,237**	**4,923**
Total liabilities and ...	**5,849**	**8,092**	**22,664**	**28,655**	**29,740**

Source: Morningstar

Appendix 3. Tesla Inc Annual Cash Flow Statement 2014-2018

Fiscal year ends in December USD in Million except per share data	2014-12	2015-12	2016-12	2017-12	2018-12
▼ Cash Flows From Operat...					
Net income	(294)	(889)	(773)	(2,241)	(1,063)
Depreciation & amortiz...	232	423	947	1,636	1,901
Investment/asset impai...	16	45	66	132	85
Stock based compensati...	156	198	334	467	749
Change in working capi...	(257)	(493)	(694)	(497)	58
Accounts receivable	(184)	46	(217)	(25)	(497)
Inventory	(1,050)	(1,574)	(2,466)	(179)	(1,023)
Prepaid expenses	(61)	(30)	57	(72)	(82)
Accounts payable	253	—	—	—	—
Accrued liabilities	162	—	—	—	—
Other working capital	623	1,064	1,932	(221)	1,660
Other non-cash items	89	192	(4)	442	367
Net cash provided by o...	**(57)**	**(524)**	**(124)**	**(61)**	**2,098**
▼ Cash Flows From Invest...					
Investments in propert...	(970)	(1,635)	(1,440)	(4,081)	(2,320)
Acquisitions, net	—	(12)	214	(115)	(18)
Purchases of investmen...	(206)	—	—	—	—
Sales/Maturities of in...	189	—	17	—	—
Other investing activi...	(4)	(26)	(206)	(223)	—
Net cash used for inve...	**(990)**	**(1,674)**	**(1,416)**	**(4,419)**	**(2,337)**
▼ Cash Flows From Financ...					
Debt issued	2,303	888	3,623	7,649	6,176
Debt repayment	(11)	(204)	(1,904)	(4,264)	(6,087)
Common stock issued	—	750	1,702	400	—
Other financing activi...	(149)	90	324	629	485
Net cash provided by (...	**2,143**	**1,524**	**3,744**	**4,415**	**574**
Effect of exchange rat...	(36)	(34)	(7)	39	(23)
Net change in cash	1,060	(709)	2,196	(25)	311
Cash at beginning of p...	846	1,906	1,197	3,393	3,965
Cash at end of period	1,906	1,197	3,393	3,368	4,276
Free Cash Flow					
Operating cash flow	(57)	(524)	(124)	(61)	2,098
Capital expenditure	(970)	(1,635)	(1,440)	(4,081)	(2,320)
Free cash flow	(1,027)	(2,159)	(1,564)	(4,142)	(222)

Source: Morningstar

Appendix 4. Audi AG Annual Income Statement 2014-2018

Fiscal year ends in December EUR in Million except per share data	2014-12	2015-12	2016-12	2017-12	2018-12
Revenue	53,787	58,420	59,317	60,128	59,250
Cost of revenue	44,415	47,043	49,390	50,545	50,117
Gross profit	9,372	11,377	9,927	9,583	9,133
▼ Operating expenses					
Sales, General and adm...	5,482	6,422	6,470	5,982	4,851
Other operating expens...	(1,260)	119	(1,422)	(1,885)	(1,532)
Total operating expens...	**4,222**	**6,541**	**5,048**	**4,097**	**3,319**
Operating income	5,150	4,836	4,879	5,486	5,814
Interest Expense	287	62	95	125	115
Other income (expense)	1,128	510	(1,737)	(578)	(1,338)
Income before taxes	5,991	5,284	3,047	4,783	4,361
Provision for income t...	1,563	987	980	1,304	898
Net income from contin...	4,428	4,297	2,067	3,479	3,463
Other	(61)	(93)	(82)	76	(81)
Net income	4,367	4,204	1,985	3,555	3,382
Preferred dividend	—	—	—	—	(445)
Net income available t...	4,367	4,204	1,985	3,555	3,827
Earnings per share					
Basic	101.55	97.78	46.16	82.69	78.64
Diluted	101.55	97.78	46.16	82.69	78.64
Weighted average share...					
Basic	43	43	43	43	43
Diluted	43	43	43	43	43
EBITDA	8,714	8,011	6,286	8,488	7,407

Source: Morningstar

Appendix 5. Audi AG Annual Balance Sheet 2014-2018

Fiscal year ends in December EUR in Million except per share data	2014-12	2015-12	2016-12	2017-12	2018-12
▼ Assets					
▼ Current assets					
▼ Cash					
Cash and cash equivale...	11,391	12,375	11,449	11,273	9,309
Short-term investments	7,470	7,139	7,608	7,949	6,749
Total cash	**18,861**	**19,514**	**19,057**	**19,222**	**16,058**
Receivables	3,648	4,097	4,880	5,533	5,800
Inventories	5,071	6,317	7,233	7,893	9,406
Other current assets	651	872	1,233	1,198	1,376
Total current assets	**28,231**	**30,800**	**32,403**	**33,846**	**32,640**
▼ Non-current assets					
▼ Property, plant and eq...					
Gross property, plant ...	28,606	31,646	34,520	—	14,293
Accumulated Depreciati...	(18,933)	(20,266)	(21,929)	—	—
Net property, plant an...	**9,673**	**11,380**	**12,591**	**13,660**	**14,293**
Goodwill	—	—	—	—	378
Intangible assets	5,292	5,787	6,550	6,785	7,207
Deferred income taxes	2,351	2,939	2,601	2,003	2,319
Other long-term assets	5,222	5,857	6,944	7,386	8,196
Total non-current asse...	**22,538**	**25,963**	**28,686**	**29,834**	**32,393**
Total assets	**50,769**	**56,763**	**61,089**	**63,680**	**65,033**

▼ Liabilities and stockh...					
▼ Liabilities					
▼ Current liabilities					
Short-term debt	1,414	162	426	248	86
Capital leases	8	13	21	22	—
Accounts payable	5,824	7,204	7,406	7,313	8,565
Deferred income taxes	—	—	—	—	248
Taxes payable	665	271	267	590	383
Other current liabilit...	10,814	13,904	12,585	13,035	12,069
Total current liabilit...	**18,725**	**21,554**	**20,705**	**21,208**	**21,351**
▼ Non-current liabilitie...					
Long-term debt	20	18	17	35	30
Capital leases	195	229	297	293	—
Deferred taxes liabili...	211	192	217	217	270
Pensions and other ben...	—	—	—	—	139
Minority interest	403	531	636	487	625
Other long-term liabil...	12,418	12,992	14,533	13,756	14,110
Total non-current liab...	**13,247**	**13,962**	**15,700**	**14,788**	**15,174**
Total liabilities	**31,972**	**35,516**	**36,405**	**35,996**	**36,525**
▼ Stockholders' equity					
Common stock	110	110	110	110	—
Additional paid-in cap...	—	—	—	—	110
Retained earnings	10,628	12,308	12,731	14,015	16,219
Accumulated other comp...	8,058	8,830	11,844	13,559	12,744
Total stockholders' eq...	**18,796**	**21,248**	**24,685**	**27,684**	**29,073**
Total liabilities and ...	**50,768**	**56,764**	**61,090**	**63,680**	**65,598**

Source: Morningstar

Appendix 6. Audi AG Annual Cash Flow Statement 2014-2018

Fiscal year ends in December EUR in Million except per share data	2014-12	2015-12	2016-12	2017-12	2018-12
▼ Cash Flows From Operat...					
Net income	5,991	5,284	3,047	4,783	4,361
Depreciation & amortiz...	2,436	2,665	3,144	3,580	2,931
Investments losses (ga...	(1)	(5)	55	(12)	(163)
Deferred income taxes	(1,136)	(1,698)	(947)	(1,146)	—
Change in working capi...	577	305	2,080	(1,120)	2
Inventory	(438)	(1,143)	(798)	(967)	(1,416)
Other working capital	1,015	1,448	2,878	(153)	1,418
Other non-cash items	(446)	652	138	88	(118)
Net cash provided by o...	**7,421**	**7,203**	**7,517**	**6,173**	**7,013**
▼ Cash Flows From Invest...					
Investments in propert...	(2,979)	(3,534)	(3,409)	(3,872)	(5,086)
Acquisitions, net	(192)	(855)	(11)	(72)	137
Purchases of investmen...	(842)	(1,301)	(1,612)	(54)	—
Purchases of intangibl...	—	—	—	—	(1,593)
Other investing activi...	(4,927)	3,486	4,089	(1,500)	(627)
Net cash used for inve...	**(8,940)**	**(2,204)**	**(943)**	**(5,498)**	**(7,169)**
▼ Cash Flows From Financ...					
Common stock issued	1,591	1,620	1,526	459	43
Other financing activi...	(3,092)	(3,195)	(3,980)	(983)	(2,607)
Net cash provided by (...	**(1,501)**	**(1,575)**	**(2,454)**	**(524)**	**(2,564)**
Effect of exchange rat...	171	105	56	(292)	16
Net change in cash	(2,849)	3,529	4,176	(141)	(2,704)
Cash at beginning of p...	6,540	3,689	7,218	11,395	11,255
Cash at end of period	3,691	7,218	11,394	11,254	8,551
Free Cash Flow					
Operating cash flow	7,421	7,203	7,517	6,173	7,013
Capital expenditure	(4,290)	(4,796)	(5,085)	(5,115)	(5,086)
Free cash flow	3,131	2,407	2,432	1,058	1,927

Source: Morningstar

Appendix 7. Bayerische Motoren Werke AG Annual Income Statement 2014-2018

Fiscal year ends in December EUR in Million except per share data	2014-12	2015-12	2016-12	2017-12	2018-12
Revenue	80,401	92,175	94,163	98,678	97,480
Cost of revenue	63,396	74,043	75,442	78,744	78,924
Gross profit	17,005	18,132	18,721	19,934	18,556
▼ Operating expenses					
Sales, General and adm...	7,892	8,633	9,158	9,560	9,558
Other operating expens...	(8)	19	259	589	(10)
Total operating expens...	**7,884**	**8,652**	**9,417**	**10,149**	**9,548**
Operating income	9,121	9,480	9,304	9,785	9,008
Interest Expense	519	618	489	412	386
Other income (expense)	105	362	850	1,282	1,193
Income before taxes	8,707	9,224	9,665	10,655	9,815
Provision for income t...	2,890	2,828	2,755	1,949	2,575
Net income from contin...	5,817	6,396	6,910	8,706	7,240
Net income from discon...	—	—	—	—	(33)
Other	(19)	(27)	(47)	(86)	(90)
Net income	5,798	6,369	6,863	8,620	7,117
Net income available t...	5,798	6,369	6,863	8,620	7,117
Earnings per share					
Basic	8.83	9.70	10.45	13.12	10.82
Diluted	8.83	9.70	10.45	13.12	10.82
Weighted average share...					
Basic	656	656	657	657	658
Diluted	656	656	657	657	658
EBITDA	13,549	14,528	15,152	15,889	15,314

Source: Morningstar

Appendix 8. Bayerische Motoren Werke AG Annual Balance Sheet 2014-2018

Fiscal year ends in December EUR in Million except per share data	2014-12	2015-12	2016-12	2017-12	2018-12
▼ Assets					
▼ Current assets					
▼ Cash					
Cash and cash equivale...	7,688	6,122	7,880	9,039	10,979
Short-term investments	5,384	6,635	7,065	7,965	6,675
Total cash	**13,072**	**12,757**	**14,945**	**17,004**	**17,654**
Receivables	20,841	25,500	27,705	29,125	34,982
Inventories	11,089	11,071	11,841	12,707	13,047
Other current assets	11,842	12,503	12,373	12,746	17,855
Total current assets	**56,844**	**61,831**	**66,864**	**71,582**	**83,538**
▼ Non-current assets					
▼ Property, plant and eq...					
Gross property, plant ...	84,060	92,363	97,377	97,388	101,647
Accumulated Depreciati...	(36,713)	(39,639)	(41,628)	(42,660)	(43,274)
Net property, plant an...	**47,347**	**52,724**	**55,749**	**54,728**	**58,373**
Goodwill	364	364	364	380	380
Intangible assets	6,135	7,008	7,793	9,084	10,591
Deferred income taxes	2,061	1,945	2,327	1,927	1,590
Other long-term assets	42,052	48,302	55,438	55,782	54,508
Total non-current asse...	**97,959**	**110,343**	**121,671**	**121,901**	**125,442**
Total assets	**154,803**	**172,174**	**188,535**	**193,483**	**208,980**

▼ Liabilities and stockh...					
▼ Liabilities					
▼ Current liabilities					
Short-term debt	25,769	29,615	30,110	30,070	26,652
Accounts payable	7,709	7,773	8,512	9,731	9,669
Taxes payable	2,519	2,521	1,881	2,058	2,103
Other current liabilit...	23,081	25,682	27,486	27,188	32,485
Total current liabilit...	**59,078**	**65,591**	**67,989**	**69,047**	**70,909**
▼ Non-current liabilitie...					
Long-term debt	37,757	42,470	49,529	48,784	59,705
Deferred taxes liabili...	1,974	2,116	2,795	2,241	1,806
Deferred revenues	3,699	3,976	4,787	4,869	4,888
Pensions and other ben...	4,613	3,018	4,608	3,275	2,356
Minority interest	217	234	255	436	529
Other long-term liabil...	10,245	12,239	11,464	10,719	11,228
Total non-current liab...	**58,505**	**64,053**	**73,438**	**70,324**	**80,512**
Total liabilities	**117,583**	**129,644**	**141,427**	**139,371**	**151,421**
▼ Stockholders' equity					
Common stock	656	657	657	658	658
Accumulated other comp...	36,564	41,873	46,451	53,454	56,901
Total stockholders' eq...	**37,220**	**42,530**	**47,108**	**54,112**	**57,559**
Total liabilities and ...	**154,803**	**172,174**	**188,535**	**193,483**	**208,980**

Source: Morningstar

Appendix 9. Bayerische Motoren Werke AG Annual Cash Flow Statement 2014-2018

Fiscal year ends in December EUR in Million except per share data	2014-12	2015-12	2016-12	2017-12	2018-12
▼ Cash Flows From Operat...					
Net income	5,817	6,396	6,910	8,706	7,240
Depreciation & amortiz...	4,323	4,686	4,998	4,822	5,113
Deferred income taxes	2,774	2,751	2,670	2,558	2,220
Change in working capi...	(5,627)	(9,306)	(8,801)	(7,036)	(6,966)
Inventory	(971)	298	(749)	(1,293)	(357)
Other working capital	(4,656)	(9,604)	(8,052)	(5,743)	(6,609)
Other non-cash items	(4,375)	(3,567)	(2,604)	(3,141)	(2,556)
Net cash provided by o...	**2,912**	**960**	**3,173**	**5,909**	**5,051**
▼ Cash Flows From Invest...					
Investments in propert...	(6,099)	(5,889)	(5,823)	(7,112)	(7,777)
Property, plant, and e...	36	38	10	30	107
Acquisitions, net	—	—	—	—	(209)
Purchases of investmen...	(4,315)	(7,626)	(3,930)	(4,183)	(3,889)
Sales/Maturities of in...	4,262	5,874	3,880	5,102	4,384
Other investing activi...	—	—	—	—	21
Net cash used for inve...	**(6,116)**	**(7,603)**	**(5,863)**	**(6,163)**	**(7,363)**
▼ Cash Flows From Financ...					
Debt issued	10,892	13,007	13,974	13,014	—
Debt repayment	(8,261)	(9,406)	(12,006)	(9,374)	—
Common stock issued	15	23	20	38	25
Dividend paid	(1,715)	(1,917)	(2,121)	(2,324)	(2,630)
Other financing activi...	2,202	3,297	4,526	218	6,901
Net cash provided by (...	**3,133**	**5,004**	**4,393**	**1,572**	**4,296**
Effect of exchange rat...	86	73	17	(223)	(19)
Net change in cash	15	(1,566)	1,720	1,095	1,965
Cash at beginning of p...	7,671	7,688	6,122	7,880	9,039
Cash at end of period	7,686	6,122	7,842	8,975	11,004
Free Cash Flow					
Operating cash flow	2,912	960	3,173	5,909	5,051
Capital expenditure	(6,099)	(5,889)	(5,823)	(7,112)	(7,777)
Free cash flow	(3,187)	(4,929)	(2,650)	(1,203)	(2,726)

Source: Morningstar

Appendix 10. Toyota Motor Corp Annual Income Statement 2014-2018

Fiscal year ends in March JPY in Million except per share data	2014-03	2015-03	2016-03	2017-03	2018-03
Revenue	25,691,911	27,234,521	28,403,118	27,597,193	29,379,510
Cost of revenue	20,801,139	21,841,676	22,605,465	22,734,336	23,889,153
Gross profit	4,890,772	5,392,845	5,797,653	4,862,857	5,490,357
▼ Operating expenses					
Sales, General and adm...	2,598,660	2,642,281	2,943,682	2,868,485	3,090,495
Total operating expens...	**2,598,660**	**2,642,281**	**2,943,682**	**2,868,485**	**3,090,495**
Operating income	2,292,112	2,750,564	2,853,971	1,994,372	2,399,862
Interest Expense	19,630	22,871	35,403	29,353	27,586
Other income (expense)	168,598	165,135	164,813	228,806	248,153
Income before taxes	2,441,080	2,892,828	2,983,381	2,193,825	2,620,429
Provision for income t...	767,808	893,469	878,269	628,900	504,406
Other income	318,376	308,545	329,099	362,060	470,083
Net income from contin...	1,991,648	2,307,904	2,434,211	1,926,985	2,586,106
Other	(168,529)	(134,566)	(121,517)	(95,876)	(92,123)
Net income	1,823,119	2,173,338	2,312,694	1,831,109	2,493,983
Preferred dividend	—	—	6,087	9,795	12,291
Net income available t...	1,823,119	2,173,338	2,306,607	1,821,314	2,481,692
Earnings per share					
Basic	575.30	688.02	741.36	605.47	842.00
Diluted	574.92	687.66	735.36	599.22	832.78
Weighted average share...					
Basic	3,169	3,159	3,111	3,008	2,947
Diluted	3,171	3,160	3,145	3,056	2,995
EBITDA	3,711,563	4,324,774	4,644,621	3,834,128	4,382,048

Source: Morningstar

Appendix 11. Toyota Motor Corp Annual Balance Sheet 2014-2018

Fiscal year ends in March JPY in Million except per share data	2014-03	2015-03	2016-03	2017-03	2018-03
▼ Assets					
▼ Current assets					
▼ Cash					
Cash and cash equivale...	2,041,170	2,284,557	2,939,428	2,995,075	3,052,269
Short-term investments	2,227,084	2,931,420	2,543,423	2,904,252	2,669,604
Total cash	**4,268,254**	**5,215,977**	**5,482,851**	**5,899,327**	**5,721,873**
Receivables	7,665,166	8,378,522	7,912,833	8,312,587	8,567,868
Inventories	1,894,704	2,137,618	2,061,511	2,388,617	2,539,789
Deferred income taxes	866,386	978,179	967,607	—	—
Prepaid expenses	672,014	805,393	1,333,345	796,297	833,788
Other current assets	351,182	420,708	451,406	436,867	489,338
Total current assets	**15,717,706**	**17,936,397**	**18,209,553**	**17,833,695**	**18,152,656**
▼ Non-current assets					
▼ Property, plant and eq...					
Gross property, plant ...	19,764,791	22,364,429	22,776,641	23,649,094	24,043,989
Accumulated Depreciati...	(12,123,493)	(13,068,710)	(13,036,224)	(13,451,985)	(13,776,316)
Net property, plant an...	**7,641,298**	**9,295,719**	**9,740,417**	**10,197,109**	**10,267,673**
Equity and other inves...	9,194,821	10,323,586	10,071,411	10,525,567	11,162,240
Other long-term assets	8,883,648	10,174,128	9,406,216	10,193,815	10,725,680
Total non-current asse...	**25,719,767**	**29,793,433**	**29,218,044**	**30,916,491**	**32,155,593**
Total assets	**41,437,473**	**47,729,830**	**47,427,597**	**48,750,186**	**50,308,249**

▼ Liabilities and stockh...					
▼ Liabilities					
▼ Current liabilities					
Short-term debt	7,780,483	8,963,492	8,521,088	9,244,131	9,341,190
Accounts payable	2,213,218	2,410,588	2,389,515	2,566,382	2,586,657
Taxes payable	594,829	348,786	343,325	223,574	462,327
Accrued liabilities	2,313,160	2,668,666	2,726,120	3,137,827	3,104,260
Other current liabilit...	1,778,995	2,039,964	2,144,408	2,147,051	2,302,457
Total current liabilit...	**14,680,685**	**16,431,496**	**16,124,456**	**17,318,965**	**17,796,891**
▼ Non-current liabilitie...					
Long-term debt	8,546,910	10,014,395	9,772,065	9,911,596	10,006,374
Deferred taxes liabili...	1,811,846	2,298,469	2,046,089	1,423,726	1,118,165
Pensions and other ben...	767,618	880,293	904,911	905,070	931,182
Minority interest	749,839	859,198	861,472	668,264	694,120
Other long-term liabil...	411,427	457,848	971,669	1,007,753	1,025,535
Total non-current liab...	**12,287,640**	**14,510,203**	**14,556,206**	**13,916,409**	**13,775,376**
Total liabilities	**26,968,325**	**30,941,699**	**30,680,662**	**31,235,374**	**31,572,267**
▼ Stockholders' equity					
Additional paid-in cap...	948,358	944,104	945,211	881,063	884,552
Retained earnings	14,116,295	15,591,947	16,794,240	17,601,070	19,473,464
Treasury stock	(1,123,666)	(1,225,465)	(1,603,284)	(1,608,243)	(2,057,733)
Accumulated other comp...	528,161	1,477,545	610,768	640,922	435,699
Total stockholders' eq...	**14,469,148**	**16,788,131**	**16,746,935**	**17,514,812**	**18,735,982**
Total liabilities and ...	**41,437,473**	**47,729,830**	**47,427,597**	**48,750,186**	**50,308,249**

Source: Morningstar

Appendix 12. Toyota Motor Corp Cash Flow Statement 2014-2018

Fiscal year ends in March JPY in Million except per share data	2014-03	2015-03	2016-03	2017-03	2018-03
▼ Cash Flows From Operat...					
Net income	1,991,648	2,307,904	2,434,211	1,926,985	2,586,106
Depreciation & amortiz...	1,250,853	1,409,075	1,625,837	1,610,950	1,734,033
Deferred income taxes	(56,279)	(26,887)	32,889	(53,299)	(237,961)
Change in working capi...	672,963	194,195	486,320	131,996	481,424
Accounts receivable	(121,926)	(69,477)	(25,180)	(264,784)	(105,435)
Inventory	(110,819)	(171,001)	(68,912)	(246,326)	(171,148)
Accounts payable	65,312	150,058	120,381	145,957	46,648
Income taxes payable	438,527	(246,043)	(5,516)	(121,032)	238,753
Other working capital	401,869	530,658	465,547	618,181	472,606
Other non-cash items	(213,150)	(198,534)	(118,400)	(202,395)	(353,593)
Net cash provided by o...	**3,646,035**	**3,685,753**	**4,460,857**	**3,414,237**	**4,210,009**
▼ Cash Flows From Invest...					
Investments in propert...	(2,678,691)	(3,357,568)	(4,059,216)	(3,541,437)	(3,598,707)
Property, plant, and e...	783,530	844,970	1,153,874	1,279,516	1,283,092
Acquisitions, net	6,603	—	—	44,274	(576)
Purchases of investmen...	(4,738,278)	(3,194,294)	(2,197,477)	(2,517,008)	(3,052,916)
Sales/Maturities of in...	3,319,327	2,683,001	3,415,815	1,901,541	2,523,538
Other investing activi...	(1,028,739)	(789,599)	(1,495,540)	(136,825)	(814,523)
Net cash used for inve...	**(4,336,248)**	**(3,813,490)**	**(3,182,544)**	**(2,969,939)**	**(3,660,092)**
▼ Cash Flows From Financ...					
Debt issued	3,890,310	5,029,018	4,845,872	4,603,446	4,793,939
Debt repayment	(2,988,923)	(3,462,237)	(4,176,202)	(3,845,554)	(4,452,338)
Common stock issued	9,212	—	474,917	—	—
Common stock repurchas...	—	(347,784)	(778,173)	(703,986)	(447,818)
Dividend paid	(396,030)	(554,933)	(705,953)	(638,172)	(626,892)
Other financing activi...	404,911	(358,019)	(84,032)	209,101	283,974
Net cash provided by (...	**919,480**	**306,045**	**(423,571)**	**(375,165)**	**(449,135)**
Effect of exchange rat...	93,606	65,079	(199,871)	(13,486)	(43,588)
Net change in cash	322,873	243,387	654,871	55,647	57,194
Cash at beginning of p...	1,718,297	2,041,170	2,284,557	2,939,428	2,995,075
Cash at end of period	2,041,170	2,284,557	2,939,428	2,995,075	3,052,269
Free Cash Flow					
Operating cash flow	3,646,035	3,685,753	4,460,857	3,414,237	4,210,009
Capital expenditure	(2,678,691)	(3,357,568)	(4,059,216)	(3,541,437)	(3,598,707)
Free cash flow	967,344	328,185	401,641	(127,200)	611,302

Source: Morningstar

Appendix 13. Ford Motor Co Annual Income Statement 2014-2018

Fiscal year ends in December USD in Million except per share data	2014-12	2015-12	2016-12	2017-12	2018-12
Revenue	144,077	149,558	151,800	156,776	160,338
Cost of revenue	126,215	126,495	126,584	131,332	136,269
Gross profit	17,862	23,063	25,216	25,444	24,069
▼ Operating expenses					
Sales, General and adm...	14,117	14,999	12,196	11,527	11,403
Other operating expens...	(379)	(382)	8,034	8,426	8,972
Total operating expens...	**13,738**	**14,617**	**20,230**	**19,953**	**20,375**
Operating income	4,124	8,446	4,986	5,491	3,694
Interest Expense	797	773	894	1,133	1,228
Other income (expense)	1,015	2,579	2,704	3,790	1,879
Income before taxes	4,342	10,252	6,796	8,148	4,345
Provision for income t...	1,156	2,881	2,189	520	650
Net income from contin...	3,186	7,371	4,607	7,628	3,695
Other	1	2	(11)	(26)	(18)
Net income	3,187	7,373	4,596	7,602	3,677
Net income available t...	3,187	7,373	4,596	7,602	3,677
Earnings per share					
Basic	0.81	1.86	1.16	1.91	0.93
Diluted	0.80	1.84	1.15	1.90	0.92
Weighted average share...					
Basic	3,912	3,969	3,973	3,975	3,974
Diluted	4,045	4,002	3,999	3,998	3,998
EBITDA	12,562	18,991	16,407	17,734	13,881

Source: Morningstar

Appendix 14. Ford Motor Co Annual Balance Sheet 2014-2018

Fiscal year ends in December USD in Million except per share data	2014-12	2015-12	2016-12	2017-12	2018-12
▼ Assets					
▼ Current assets					
▼ Cash					
Cash and cash equivale...	10,757	14,272	15,905	18,492	16,718
Short-term investments	20,393	20,904	22,922	20,435	17,233
Total cash	**31,150**	**35,176**	**38,827**	**38,927**	**33,951**
Receivables	81,111	90,691	57,368	62,809	65,548
Inventories	7,866	8,319	8,898	10,277	11,220
Other current assets	11,708	11,284	3,368	3,889	3,930
Total current assets	**131,835**	**145,470**	**108,461**	**115,902**	**114,649**
▼ Non-current assets					
▼ Property, plant and eq...					
Gross property, plant ...	59,260	57,629	59,876	65,189	66,421
Accumulated Depreciati...	(29,134)	(27,466)	(27,804)	(29,862)	(30,243)
Net property, plant an...	**30,126**	**30,163**	**32,072**	**35,327**	**36,178**
Equity and other inves...	26,574	30,317	32,133	31,320	31,828
Goodwill	—	—	—	—	264
Intangible assets	—	—	—	—	178
Deferred income taxes	13,639	11,509	9,705	10,973	10,412
Other long-term assets	6,353	7,466	55,580	64,286	63,031
Total non-current asse...	**76,692**	**79,455**	**129,490**	**141,906**	**141,891**
Total assets	**208,527**	**224,925**	**237,951**	**257,808**	**256,540**

▼ Liabilities and stockh...					
▼ Liabilities					
▼ Current liabilities					
Short-term debt	39,172	42,998	49,669	51,621	53,493
Accounts payable	20,035	20,272	21,296	23,282	21,520
Accrued liabilities	222	255	974	1,057	988
Deferred revenues	3,923	4,559	3,866	2,107	2,095
Other current liabilit...	13,789	13,178	14,476	16,533	17,473
Total current liabilit...	**77,141**	**81,262**	**90,281**	**94,600**	**95,569**
▼ Non-current liabilitie...					
Long-term debt	79,999	89,856	93,301	102,666	100,720
Deferred taxes liabili...	570	502	691	815	597
Deferred revenues	2,686	2,833	3,687	3,829	3,985
Pensions and other ben...	15,712	14,888	15,666	15,753	14,643
Minority interest	27	15	17	28	34
Other long-term liabil...	7,587	6,927	5,138	5,227	5,060
Total non-current liab...	**106,581**	**115,021**	**118,500**	**128,318**	**125,039**
Total liabilities	**183,722**	**196,283**	**208,781**	**222,918**	**220,608**
▼ Stockholders' equity					
Common stock	40	41	41	41	41
Additional paid-in cap...	21,089	21,421	21,630	21,843	22,006
Retained earnings	24,556	14,414	15,634	21,218	22,668
Treasury stock	(848)	(977)	(1,122)	(1,253)	(1,417)
Accumulated other comp...	(20,032)	(6,257)	(7,013)	(6,959)	(7,366)
Total stockholders' eq...	**24,805**	**28,642**	**29,170**	**34,890**	**35,932**
Total liabilities and ...	**208,527**	**224,925**	**237,951**	**257,808**	**256,540**

Source: Morningstar

Appendix 15. Ford Motor Co Cash Flow Statement 2014-2018

Fiscal year ends in December USD in Million except per share data	2014-12	2015-12	2016-12	2017-12	2018-12
▼ Cash Flows From Operat...					
Net income	3,186	7,371	4,607	7,628	3,695
Depreciation & amortiz...	7,423	7,966	8,717	8,453	8,308
Deferred income taxes	1,063	2,120	1,478	(232)	(197)
Stock based compensati...	180	199	210	246	191
Change in working capi...	(246)	(2,050)	1,476	1,997	1,306
Accounts receivable	(2,897)	(3,563)	(2,855)	(2,297)	(2,239)
Inventory	(875)	(1,155)	(815)	(959)	(828)
Other working capital	3,526	2,668	5,146	5,253	4,373
Other non-cash items	2,901	564	3,304	4	1,719
Net cash provided by o...	**14,507**	**16,170**	**19,792**	**18,096**	**15,022**
▼ Cash Flows From Invest...					
Investments in propert...	(7,463)	(7,196)	(6,992)	(7,049)	(7,785)
Purchases of investmen...	(48,694)	(41,279)	(31,428)	(27,567)	(17,140)
Sales/Maturities of in...	50,545	40,900	30,179	29,998	20,885
Other investing activi...	(15,512)	(18,587)	(17,111)	(14,774)	(12,221)
Net cash used for inve...	**(21,124)**	**(26,162)**	**(25,352)**	**(19,392)**	**(16,261)**
▼ Cash Flows From Financ...					
Debt issued	40,043	50,506	49,825	47,030	50,130
Debt repayment	(32,729)	(33,358)	(38,797)	(40,770)	(44,172)
Common stock repurchas...	(1,964)	(129)	(145)	(131)	(164)
Dividend paid	(1,952)	(2,380)	(3,376)	(2,584)	(2,905)
Other financing activi...	25	(317)	(49)	(151)	(3,011)
Net cash provided by (...	**3,423**	**14,322**	**7,458**	**3,394**	**(122)**
Effect of exchange rat...	(517)	(815)	(265)	489	(370)
Net change in cash	(3,711)	3,515	1,633	2,587	(1,731)
Cash at beginning of p...	14,468	10,757	14,272	15,905	18,638
Cash at end of period	10,757	14,272	15,905	18,492	16,907
Free Cash Flow					
Operating cash flow	14,507	16,170	19,792	18,096	15,022
Capital expenditure	(7,463)	(7,196)	(6,992)	(7,049)	(7,785)
Free cash flow	7,044	8,974	12,800	11,047	7,237

Source: Morningstar

Appendix 16. General Motors Co Annual Income Statement 2014-2018

Fiscal year ends in December USD in Million except per share data	2014-12	2015-12	2016-12	2017-12	2018-12
Revenue	155,929	152,356	166,380	145,588	147,049
Cost of revenue	138,082	128,321	136,333	114,869	120,656
Gross profit	17,847	24,035	30,047	30,719	26,393
▼ Operating expenses					
Sales, General and adm...	12,158	13,405	11,710	9,575	9,650
Other operating expens...	4,039	5,733	8,792	11,128	12,298
Total operating expens...	**16,197**	**19,138**	**20,502**	**20,703**	**21,948**
Operating income	1,650	4,897	9,545	10,016	4,445
Interest Expense	403	443	572	575	655
Other income (expense)	2,999	3,264	2,711	2,422	4,759
Income before taxes	4,246	7,718	11,684	11,863	8,549
Provision for income t...	228	(1,897)	2,416	11,533	474
Net income from contin...	4,018	9,615	9,268	330	8,075
Net income from discon...	—	—	—	(4,212)	(70)
Other	(69)	72	159	18	9
Net income	3,949	9,687	9,427	(3,864)	8,014
Preferred dividend	1,145	—	—	16	98
Net income available t...	2,804	9,687	9,427	(3,880)	7,916
Earnings per share					
Basic	1.75	6.11	6.12	(2.65)	5.61
Diluted	1.65	5.91	6.00	(2.65)	5.53
Weighted average share...					
Basic	1,605	1,586	1,540	1,465	1,411
Diluted	1,687	1,640	1,570	1,492	1,431
EBITDA	11,887	16,178	22,664	24,699	22,873

Source: Morningstar

Appendix 17. General Motors Co Annual Balance Sheet 2014-2018

Fiscal year ends in December USD in Million except per share data	2014-12	2015-12	2016-12	2017-12	2018-12
▼ Assets					
▼ Current assets					
▼ Cash					
Cash and cash equivale...	18,954	15,238	12,960	15,512	20,844
Short-term investments	9,222	8,163	11,841	8,313	5,966
Total cash	**28,176**	**23,401**	**24,801**	**23,825**	**26,810**
Receivables	25,606	26,388	31,703	28,685	33,399
Inventories	13,642	13,764	13,788	10,663	9,816
Deferred income taxes	9,760	8,599	—	—	—
Other current assets	6,486	5,855	5,911	5,571	5,268
Total current assets	**83,670**	**78,007**	**76,203**	**68,744**	**75,293**
▼ Non-current assets					
▼ Property, plant and eq...					
Gross property, plant ...	44,078	63,750	88,309	103,216	109,042
Accumulated Depreciati...	(9,275)	(12,349)	(17,963)	(24,081)	(26,725)
Net property, plant an...	**34,803**	**51,401**	**70,346**	**79,135**	**82,317**
Equity and other inves...	8,350	9,201	8,996	9,073	9,215
Goodwill	1,427	1,371	1,868	1,857	1,861
Intangible assets	4,983	4,576	4,391	3,992	3,718
Deferred income taxes	25,414	28,443	35,092	23,544	24,082
Other long-term assets	19,030	21,521	24,794	26,137	30,853
Total non-current asse...	**94,007**	**116,513**	**145,487**	**143,738**	**152,046**
Total assets	**177,677**	**194,520**	**221,690**	**212,482**	**227,339**

▼ Liabilities and stockh...					
▼ Liabilities					
▼ Current liabilities					
Short-term debt	14,988	19,562	29,028	26,965	31,891
Accounts payable	22,529	24,062	26,961	23,929	22,297
Accrued liabilities	26,562	25,615	26,437	22,596	24,545
Deferred revenues	1,622	2,227	2,755	3,400	3,504
Total current liabilit...	**65,701**	**71,466**	**85,181**	**76,890**	**82,237**
▼ Non-current liabilitie...					
Long-term debt	31,853	43,549	55,600	67,254	73,060
Accrued liabilities	10,218	8,850	8,994	8,253	7,865
Deferred revenues	1,556	2,007	2,362	2,887	2,959
Pensions and other ben...	31,276	27,429	24,552	20,318	17,783
Minority interest	567	452	239	1,199	3,917
Other long-term liabil...	1,049	896	926	680	658
Total non-current liab...	**76,519**	**83,183**	**92,673**	**100,591**	**106,242**
Total liabilities	**142,220**	**154,649**	**177,854**	**177,481**	**188,479**
▼ Stockholders' equity					
Common stock	16	15	15	14	14
Additional paid-in cap...	28,937	27,607	26,983	25,371	25,563
Retained earnings	14,577	20,285	26,168	17,627	22,322
Accumulated other comp...	(8,073)	(8,036)	(9,330)	(8,011)	(9,039)
Total stockholders' eq...	**35,457**	**39,871**	**43,836**	**35,001**	**38,860**
Total liabilities and ...	**177,677**	**194,520**	**221,690**	**212,482**	**227,339**

Source: Morningstar

Appendix 18. General Motors Co Annual Cash Flow Statement 2014-2018

Fiscal year ends in December USD in Million except per share data	2014-12	2015-12	2016-12	2017-12	2018-12
▼ Cash Flows From Operat...					
Net income	4,018	9,615	9,268	330	8,075
Depreciation & amortiz...	7,238	8,017	10,408	12,261	13,669
Deferred income taxes	(574)	(2,757)	1,886	10,880	(112)
Change in working capi...	244	(1,754)	(438)	(3,015)	(1,376)
Accounts receivable	(1,248)	(254)	(1,285)	1,402	492
Inventory	(309)	(1,350)	(320)	440	399
Accounts payable	19	1,953	3,469	(362)	(537)
Accrued liabilities	6,089	(801)	1,015	(2,238)	732
Income taxes payable	(145)	60	(227)	(3)	(75)
Other working capital	(4,162)	(1,362)	(3,090)	(2,254)	(2,387)
Other non-cash items	(868)	(1,143)	(4,579)	(3,128)	(5,000)
Net cash provided by o...	**10,058**	**11,978**	**16,545**	**17,328**	**15,256**
▼ Cash Flows From Invest...					
Investments in propert...	(11,867)	(23,032)	(29,166)	(27,633)	(25,497)
Property, plant, and e...	533	1,096	2,557	6,667	10,864
Acquisitions, net	(53)	(928)	(809)	(41)	(83)
Purchases of investmen...	(9,154)	(9,363)	(15,444)	(5,503)	(2,820)
Sales/Maturities of in...	8,755	10,221	11,743	9,007	5,108
Other investing activi...	(3,912)	(6,029)	(4,524)	(10,069)	(8,335)
Net cash used for inve...	**(15,698)**	**(28,035)**	**(35,643)**	**(27,572)**	**(20,763)**
▼ Cash Flows From Financ...					
Debt issued	31,373	35,679	45,141	52,187	43,801
Debt repayment	(19,524)	(17,256)	(23,815)	(33,592)	(33,323)
Preferred stock issued	—	—	—	985	—
Common stock issued	—	—	—	—	2,862
Common stock repurchas...	(3,277)	(3,520)	(2,500)	(4,492)	(190)
Dividend paid	(3,165)	(2,242)	(2,368)	(2,233)	(2,242)
Other financing activi...	268	1,025	681	(271)	546
Net cash provided by (...	**5,675**	**13,686**	**17,139**	**12,584**	**11,454**
Effect of exchange rat...	(1,102)	(1,345)	(213)	348	(299)
Net change in cash	(1,067)	(3,716)	(2,172)	2,688	5,648
Cash at beginning of p...	20,021	18,954	17,332	15,160	17,848
Cash at end of period	18,954	15,238	15,160	17,848	23,496
Free Cash Flow					
Operating cash flow	10,058	11,978	16,545	17,328	15,256
Capital expenditure	(11,867)	(23,032)	(29,166)	(27,633)	(25,497)
Free cash flow	(1,809)	(11,054)	(12,621)	(10,305)	(10,241)

Source: Morningstar