A Work Project, presented as part of the requirements for the Award of a Master Degree in Finance from the NOVA – School of Business and Economics.

DAIMLER EQUITY RESEARCH - OVERVIEW

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A Project carried out on the Master in Finance Program, under the supervision of:

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Abstract

This report aims to provide investors a detailed analysis on Daimler's position in the automobile industry. The reader will find Daimler's past years performance highlights, hints on the future trends of the industry and an investigation on Daimler's strategy for the next years.

Keywords

Daimler, Electric Vehicle, Market Overview

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This report is part of the DAIMLER EQUITY RESEARCH report and should be read has an integral part of it.

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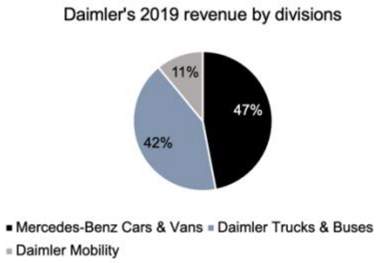
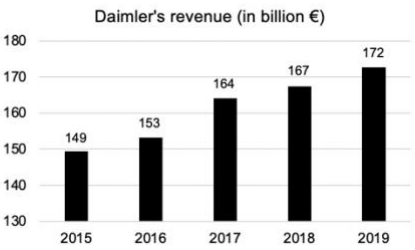
Company at a glance

- Company's overall



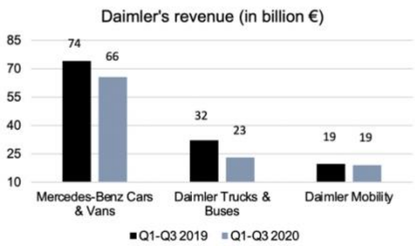
Source: Daimler's financial report

Daimler is a premium car and commercial vehicle manufacturer. The creation of the company goes back to 1926 when Daimler Motorengesellschaft and Rheinische Gasmotorenfabrik merged. Those companies were led by the pioneers of the automobile, Gottlieb Daimler and Carl Benz. The headquarters are in Stuttgart, Germany. The company has production facilities in Europe, North and South America, Asia, and Africa. **Daimler Group is subdivided into two segments: Industrial services and Daimler Mobility.** The industrial services was composed of Mercedes-Benz Cars, Daimler Trucks, Mercedes-Benz Vans, Daimler Buses. Daimler Mobility was composed of Daimler Financial Services. It was simplified in 2019. Industrial services is now composed of Mercedes-Benz Cars & Vans (74.1% of Daimler's revenues) and Daimler Trucks & Buses (10.7% of Daimler's revenues). Daimler financial services only changed its name to Daimler mobility (15.2% of Daimler's revenues). Daimler Mobility provides financial and mobility solutions such as rental and insurance. The company brand portfolio is composed of Mercedes-Benz, Mercedes-AMG, Mercedes-Maybach, Mercedes me, Smart, EQ, Freightliner, Western Star, BharatBenz, FUSO, Setra and Thomas Built Buses. The Daimler Mobility brands are Mercedes-Benz Bank, Mercedes-Benz Financial Services, Daimler Truck Financial, moovel, car2go and mytaxi.



Source: Daimler's financial report

From 2015 to 2019, the company's total revenue increased from 149,467 million euros to 172,745 million euros giving a 3.68% Compound Annual Growth Rate (CAGR). Last year's increase of three percent is mainly explained by an increase of contract volume at Daimler Mobility (+6% of contract volume), and stronger pricing at Daimler Trucks (+5% of division's revenues). Daimler mobility increased its average value per contract in 2019 (+3% average value per contract) due to the merger of the mobility services of Daimler Group and BMW Group. This joint ventures "YOUR NOW" is developing solutions for the future of mobility, from car-sharing to multimodal trip-planning. The merger of the mobility services of Daimler Group and BMW Group highlights the changing habits of users in terms of transport, and the growing market of urban mobility.

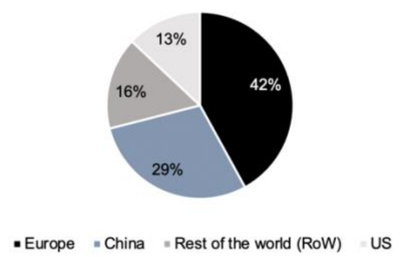


Source: Daimler's financial report

In 2020, Q1-Q3 total revenues dropped (-14% of Daimler's total revenues) due to the COVID-19 pandemic which led to restrictions in many countries around the globe. Compared to 2019, the largest drop in revenues has been felt at Daimler trucks & buses division (-27% of the division's revenues) but Daimler cars & vans division has been impacted too (-17% of the division's revenues). We are forecasting a relaxation of the restrictions in 2021, as vaccines are getting encouraging results. We expect a quick recovery in terms of revenue, and forecasted total revenue in 2022 at the same level with 2019.

- Business model

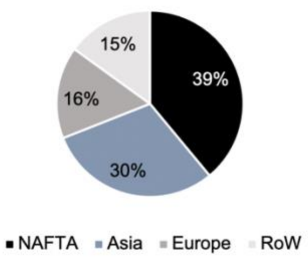
Mercedes-Benz cars unit sales geography (2019)



Source: Daimler financial report

Daimler industrial business develops, produces, commercializes and Daimler mobility provides financing, leasing, insurance and mobility solutions. The vehicle plants are mostly in Europe. Delivered parts kits are locally assembled in Asia. The powertrain plants are mostly in Germany, and the Sindelfingen plant is Daimler's largest production plant, producing the executive and luxury class Mercedes-Benz cars. Main cars suppliers are Thyssenkrupp for suspension, Eagle Ottawa for the seats, Inteva Products for the sunroofs, Carcoustics for the soundproofing. The Mercedes-benz cars are mostly sold in China (29.1% of cars sales), Germany (14.1% of cars sales) and United States of America (US) (13.1% of cars sales). Mercedes vans are mostly sold in Germany (27.7% of vans sales). Daimler trucks are mostly sold in US (35.7% of trucks sales). Daimler Buses are mostly sold in Brazil (27.0% of buses sales). Regarding Daimler mobility: Europe, US and China represent the largest markets (respectively 41.3%, 36.6% and 10.1% of total contract volume). Africa & Asia (excluding China) share the remaining 12.0% of total contract volume.

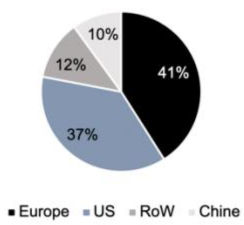
Daimler trucks unit sales geography (2019)



Source: Daimler financial report

Mercedez-Benz cars are positioned on the premium segment, selling high-end quality cars and delivering strong performances. The company is known for the comfort and safety in its vehicles. The A and B class (22.1% of cars sales) is targeting younger customers, while C and E class (respectively 18.4% and 17.5% of cars sales) is targeting business executive. The SUVs (33.1% of cars sales) is for family uses. The S class (3.1% of cars sales) is for in the luxury segment. Smart cars (4.5% of cars sales) is for city uses. The sport segment (1.2% of cars sales) is usually a second car and for customers seeking extreme performances. The Mercedes-AMG brand focuses on performance, the Mercedes-Maybach brand focuses on luxury and the EQ brand focuses on electric vehicles.

Daimler mobility contracts sales geography (2019)

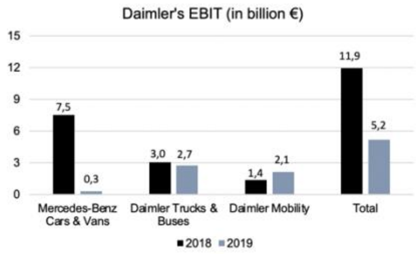


Source: Daimler financial report

Ongoing governmental and legal proceedings and measures regarding diesel vehicles, as well as another recall of vehicles with Takata airbags reduced the company's Earnings Before Interest and Taxes (EBIT) in 2019 (-56.7% compared to 2018). The vans business unit had a return on sales of -20.8% (representing -59,8% of total EBIT). The cars, trucks and buses business units had a return on sales of respectively 3.6%, 6.1% and 6.0% (representing 65.1%, 47.7% and 5.5% of total EBIT). Daimler mobility had a return on equity of 15.3% (representing 41.5% of total EBIT).

- Management & Shareholders

The board of management had consequent changes in 2019. Dieter Zetsche, 67 years old, former Chairman of the Management Board of Mercedes-Benz since 2006, let his place to Ola Källenius. He is member of the Board of Management of Daimler AG since 2015, and also Chairman of the Board of Management of Mercedes-Benz AG and Chairman of the Supervisory Board of Daimler Truck AG. This change marked the company's transition from the diesel era to the electric one. He became the first non-German Chief Executive Officer (CEO). The freshly appointed CEO will bring considerable changes to the company. Ola Källenius's 2019 **new structure plan aims to increase company's efficiency and reduce the break-even point by reviewing the costs structure.** In addition, Ola Källenius presented the company's will to go toward electric mobility: **The company's vision for 2039 of a sustainable business and fully electrified products portfolio**. It is a challenge for the company which was created by the pioneers of combustible automobile.



Source: Daimler financial report

Daimler's shareholder structure by region (2019)	
Germany	34,0%
Europe (excl. Germ.)	24,1%
Asia	16,7%
US	13,2%
Kuwait	6,8%
Rest of the world	5,2%
Total	100,0%

Source: Daimler financial report

In terms of geography, **Germany has with 34% of the shares.** The rest of Europe holds 24.1% of the shares. USA and Kuwait have respectively 13.2% and 6.8% of the shares. Asia represents 16.7% of the shareholder structure while the rest of the world share the 5.2% remaining.

The capital stock is composed of 52.6% of Institutional investors, 22.8% of retail investors and 24.6% of main shareholders. Within those main shareholders, **Tenaciou3 Prospect Investment Limited has 9.7% of the capital stock.** The company is controlled by Li Shufu, CEO of Geely, a Chinese automotive company, who acquired Daimler's share in 2018 and became the largest individual shareholder. Geely company will oversee the development of Smart cars in China, and will cooperate to develop powertrain for hybrid vehicles, increasing economies of scale. The **Kuwait Investment Authority owns 6.8%** of the capital stock, which has been a shareholder of Daimler since 1974 and acquired about 14% of the shares at that time. State-owned Beijing Automobile Group Co Ltd **(BAIC Group) has acquired 5%** of the shares in 2019. Rumours are telling that the BAIC group is willing to increase its share to 10% in order to upstage its rival Geely. **Renault-Nissan has 3.1%** of the shares.

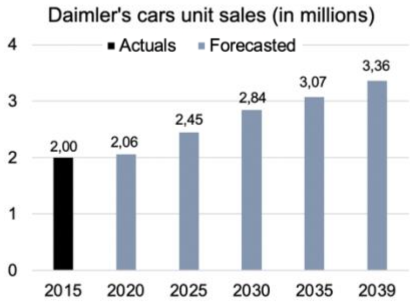
Daimler's shareholder structure by type of shareholders (2019)	
Institutional Investors	52,6%
Retail Investors	22,8%
Tenaciou3 Prospect Investment Lim	9,7%
Kuwait Investment Authority	6,8%
BAIC Group	5,0%
Renault-Nissan	3,1%
Total	100,0%

Source: Daimler financial report

Market overview

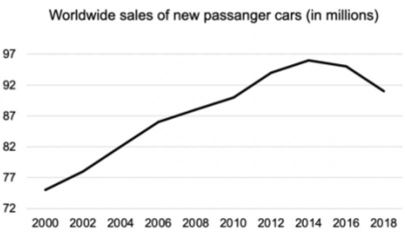
Around the world

- Global outlook



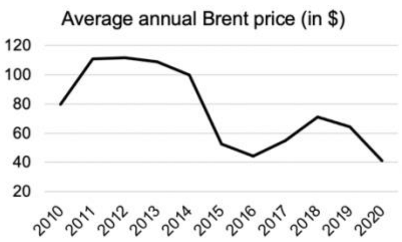
Source: Own estimations

The global automobile market continues its contraction phase. In 2019, the EBIT margin reduced, as the automobile market players aimed to keep market share. Worldwide, the passenger cars sales represent 64 millions units in 2019 (-7.2% compared to 2018). Daimler has a global market share of 3.7%. The commercial vehicles sales represent 27 millions units (+3.8% compared to 2018). Daimler's performance in the cars business unit led to a 6.4% of market share in Europe, 1.9% in the US and 3.3% in China.



Source: OICA

Automotive companies made heavy investments in Research and Development (R&D) for electric vehicle technologies, paid fines for the Dieselgate scandal, and did quick sales of vehicles before the new 2020 regulations. In 2020, automotive companies continued to electrify their portfolios without certainty of the Electric Vehicle (EV) success. Besides, the COVID-19 dropped total sales of 25% on average, stressing companies' cash available. On top of it, the environmental issues and rise of technologies gave more power to the software companies. Finally, alternative mobility is becoming more popular, incentivizing companies to find new business models (car sharing, chauffeur service,…). Those costs encouraged companies to do partnerships or even do fusions like Fiat Chrysler Automobiles (FCA) and Peugeot S.A. (PSA) did in December 2019.

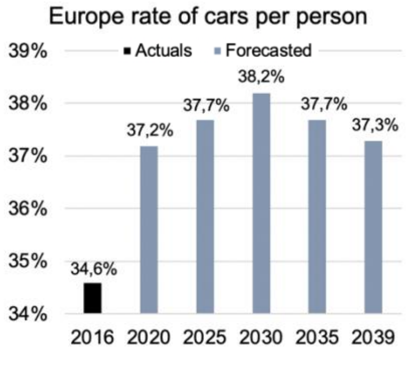


Source: INSEE

Concerning EV, the price remains one of the main argument against electric cars. **The help provided from governments will have a significant impact on the transition from internal combustible engine toward EV transportation**. We expect government's help to be only transitional. In fact, China already cut electric car purchase subsidies by about half in 2019 and the US federal tax credit programme ran out for key electric vehicle automakers. Yet in 2019 the evolution gives optimistic projections: according to IEA's Global EV outlook, electric cars accounted for 2.6% of global car sales and about 1% of car stock in 2019 and registered a 40% year-on-year increase. It is a quickly growing market.

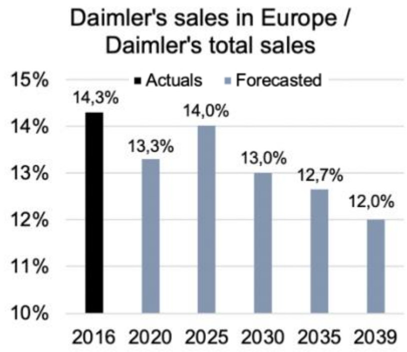
- Europe's enthusiasm for the transition to EVs.

We claim that Daimler has to focus on European market (41.6% of car sales of Daimler in 2019 vs. 43.7% in 2015) with its new and future EV vehicles, as it appears be the first to ban non-EV vehicles. The Government of Norway has established that all new passenger cars and light vans sold in 2025 shall be zero-emission vehicles. In the United Kingdom (UK), thermic cars and vans are going to be forbidden by 2030, hybrids will be forbidden by 2035. France is forbidding the sales of fossil fuels by 2040. Despite that Germany still did not announce a clear phase-out plan of fossil fuel passenger cars, we forecasted that the other countries of Europe will follow the trend, and members of the European Union might be obliged to actively participate in the transition. Daimler has to be among the first movers and offer attractive EV vehicles to keep its market share as competition will increase.



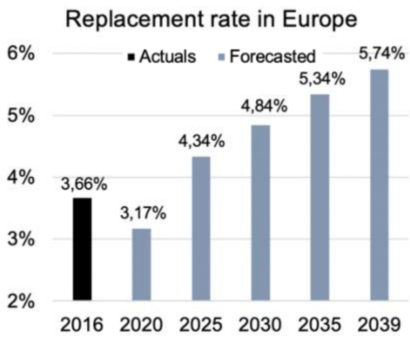
Source: Own estimations

Europe is a mature market where Daimler has 6.5% of market share. Between 2015 and 2019 population increased on average by 0,14% per year. In the 2015-2019 period the European car market grew at a CAGR of 2.80%. Daimler slightly outperformed the market with a CAGR of 3.22% for the same period. Daimler's sales in 2020-2035 increase slowly. Europe will represent 27.7% of total sales in 2035. It weights 37.3% in 2020. During the 2021-2039 period, the market share will remain constant, as we believe that all manufacturers will try to keep up with competition in high growth potential markets. Europe as a mature market will not have high growth but rather a smooth transition from combustible engines to electric vehicles.



Source: Own estimations

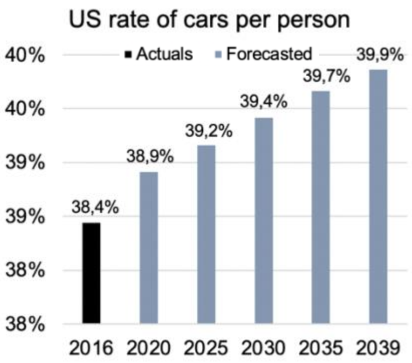
In Europe we forecasted a slight increase of Rate of Car per Person (RCP) until 2030, and then a decrease. For the coming years, European governments will continue to incentivize customers to buy EV vehicles through help such as subsidies, tax breaks, or a combination of incentives. European customers are willing to put extra money on alternative engine solutions, safety and autonomy. Then on a further perspective, we consider that European will adopt other transportation means than personal cars (shared cars, chauffeur, public transportation). As per Deloitte's report, the younger people in Europe are questioning if owning a car is still needed. European consumers support greater access to mass transit. Regarding EV, small city cars are not successful as the customers are more price sensitive for the entry-price vehicles. The price increase for a EV and its short range due to its size make it difficult to sale. In most European countries, passenger vehicle driving distances average 40-80 Kilometers (km) per day, with 2-3 trips per day. But the fear of missing out is still predominant and customers are more tend to buy an hybrid vehicle. Germany and Austria are the most skeptical regarding connectivity and autonomous vehicle.



Source: Own estimations

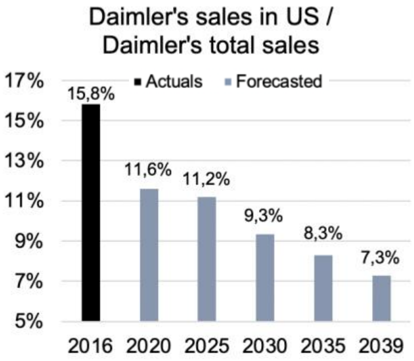
- An American pessimism

Regarding the United States of America (13.1% of car sales of Daimler in 2019 vs. 18.0% in 2015), we do not expect the rest of the US to adopt clear regulations as in Europe, as US inhabitants remains septic about EV technologies. California and in New York are the most avant-gardist states: all new car sales to be zero emission vehicles by 2035. In 2020 the country had the highest numbers of cases and deaths due to coronavirus in the world. The unemployment rate went from under 4.0% in February to more than 14.0% in March. Despite decreasing during the rest of the year 2020, it still did not pass under the 6%. We believe that it will reflect into people's purchasing power and affect the US market for EV cars for the short term. Competition is high. Telsa has competitive advantage with a large infrastructure of chargers already implemented, loyal customers and will get economies of scale with the new giga factories. **We deducted that Daimler should reduce its investment on the US market, in order to save costs and focus on market with higher potential. The company has a CAGR of -3.37% for the 2015-2019 period.** The US market has a CAGR of -0.14% for the same period. Being a mature market, the RCP stayed between 38% and 39% in those five years. Since 2015 the replacement rate (RR), has decreased until 2018 (12.6% to 11.8%), had a strong increase in 2019 and reached 15%. The US market share of Daimler decreased from 2.05% in 2015 to 1.80% in 2019.



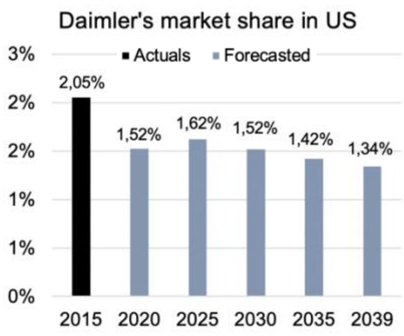
Source: Own estimations

The US market is rather pessimistic about autonomous driving and EV transition, which threaten Daimler's position. The population is not willing to pay a premium for alternative engine solutions or autonomous driving. They are also concern about any new connectivity in their vehicles and consider it as intrusive. According to the 2020 Deloitte survey on automotive consumer, more than half of American thinking that an increase in connectivity won't be particularly beneficial. 6 out of 10 are concerned about biometric data such as heart rate or blood alcohol level being captured and shared to external parties like insurance or vehicle manufacturer. They would rather put extra money on infotainment. In addition, media reporting incidents involving autonomous cars creates safety concerns. Consequently Americans are still considering internal combustion engine for their next vehicle. Despite a low daily distance an average Americans would not consider buying a car with less than 300 km of autonomy and a charging time superior than an hour. Even though they are less willing for alternative engine solutions, surveys show that an growing interest.



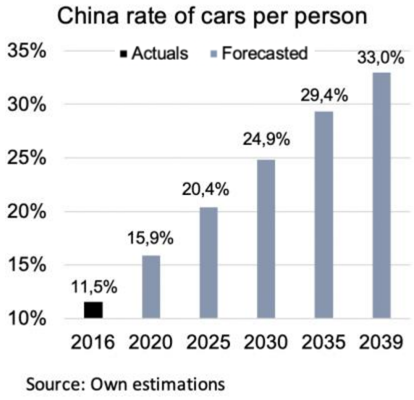
Source: Own estimations

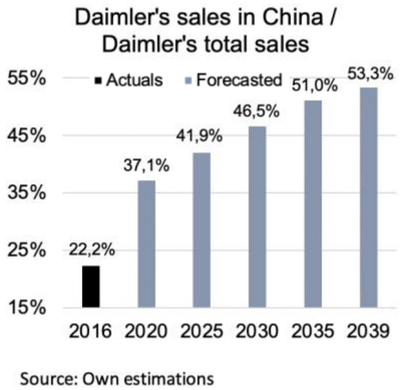
The forecast for Daimler in the US market is a CAGR of 0.13% for 2020-2039. Concerning the US market, the growing population (0.52% CAGR) will carry the growth at a 0.81% CAGR for the forecasted period. The RCP will slowly increase, at an estimated 0.05 percentage point per year, giving a total of 1 percentage point on estimated period. **We believe that Daimler will lose market share during the period of its products electrification as inhabitant won't pay premium price for EV technologies.** Consumers will continue to buy Internal Combustible Engine (ICE) from American and Japanese brands, and will most likely buy electric cars from specialized brand, such as Tesla, which will be entrusted by experience. Therefore, it is forecasted a market share of 1.34% in 2039 for Daimler, which would by then sell only 7.3% of their cars in the US.

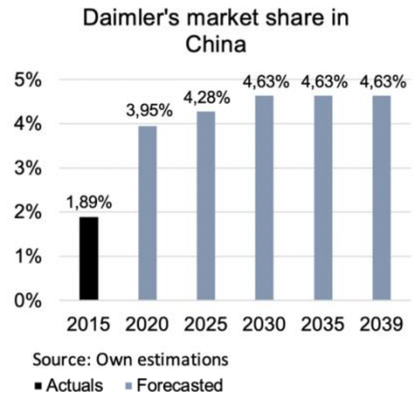


Source: Own estimations

- The Chinese future potential







Concerning China **(29.1% of car sales of Daimler in 2019 vs. 20.0% in 2015)**, in 2019 the Chinese Ministry of Industry and Information Technology issued the Development Plan of New Energy vehicle Industry stating that the sales of new energy vehicles would represent 25% of total sales by 2025. Translated in numbers with our forecast, it represents six millions EV cars. **A high wealth growth and increasing RCP will lead China to the symbolic number of half a billion cars on the Chinese road in 2039**, while here are around 210 million cars in China in 2019. China already represents the largest market for Daimler with around 700,000 passenger cars sold in 2019, representing a market share of 3.2%. In the 2015-2019 period the Chinese car market grew at a CAGR of 0.29% while Daimler performed a CAGR of 14.77% for the same period. This resulted of an increase of the market share from 1.9% in 2015 to 3.2% in 2019. Showing a great rebound from the sanitary crisis, Q4 2020 sales could be higher than Q4 2019. Daimler has shown its growing interests for China with recent investments. The 50-50 joint venture with Zhejiang Geely Holding Group to operate the electric smart brand and the construction of a new Research and Development Tech Center in Beijing are two examples.

Car ownership in China remains relatively low and the average Chinese customer is very young compare to the other main markets. According to Hubertus Troska, Daimler's board member responsible for Greater China, the average premium buyer of Mercedes-Benz in China is less than 36 years old. It is 20 years younger than the average German buyer and 10 years younger than the American one. The McKinsey China Auto Consumer Insight 2019 report shows that 60% of Chinese customer will most likely trade their old car for a more expensive one. High-end vehicles buyers are considering the look, the performance and the driving experience first. It is expected a strong growth and China will continue to be market leader for the car industry. In our forecasted period 2020-2039, the Chinese car market will grow at a CAGR of 3.73% while Daimler will perform a CAGR of 4.59%. We expect Daimler to align with the market trends of young customers looking for performance and distinctive car to highlight their social status. Daimler will increase their market share from 4.0% in 2020 to 4.6% in 2039. RCP is forecasted to strongly increase with 0.9% point per year, reaching 33.0% in 2039. **We concluded that Daimler's focus on the Chinese market should be on the performance with Mercedes-AMG, the luxury with Mercedes-Maybach and electric markets with EQ in order to satisfy all type of Chinese customer.**

Where the new era is heading

- The battery dilemma

The battery is the most expensive element of the EV vehicle. A lithium-ion battery, like all batteries, contains a positive electrode called the cathode, and a negative electrode called the anode, separated by an electrolyte. The electrons of the lithium are transported from the anode to the cathode, which gives energy. Batteries has a great advantage: 80% of the energy created is transferred from battery to wheels, while only 30% of the combustion of fuel is transferred to the wheels, and about 60% for fuel cells. Taking into account all the process of hydrogen fuel cell creation like electrolysis system and the tank compression, it gets close to a total of 35% efficiency. **As batteries increase cars' price and potential owners are concerned about the charging time and the range, one can wonder how to make better batteries?**

1) **By improving the battery's design.** The cylinder shape is the current dominant shape because they are mechanically stable and can store large amount of energy. At first, manufacturing a bigger battery was not possible because the heat goes up and brings safety issues. But recent designs with breakthrough innovation allows the electrodes to travel the heigh of the battery instead of the length, which reduces the distance of travel and therefore the heat. This design is a cylinder shape battery with the tab spread out all along the batteries' layers. The tab is an important part of the battery which connects the anode and the cathode layers to the electrodes, which transfer the energy to an external source. Therefore we expect the size of batteries to increase.
2) **By improving the manufacturing process.** Current batteries are created when a wet slurry mixture is added to an electrode and processed coat and dries. **The company Maxwell technologies came up with a new system that uses dry coating,** which would decrease the amount of energy needed and reduce manufacturing costs.
3) **By changing the anode and cathode materials used in the batteries.** For the cathode, the main component today is cobalt. Some companies are using other materials, like Nissan which is using manganese because of its low cost but it has less energy density. Tesla uses a nickel-cobalt-aluminium mix for its cathode. Iron or nickel are also possible alternatives. Iron has a long life expectancy but has less energy density. Nickel has more energy density but has less lifecycle expectancy. The material mostly used for the anode is graphite. As an alternative, silicone has much more capacity storage but the charging cycles damage the battery and reduce battery capacity over time.

4) **By changing the design of the platform**. Currently, car manufacturers incorporate batteries in their internal combustion car models. The creation of new platforms, designed for EV cars only, would increase efficiency and range.

Still, batteries have several flaws. Cycling ageing due to cathode and anode damages and lithium plating (lithium metal that has been deposited on the surface of the anode, but has not moved into the carbon intercalation sites) are the most commons. The battery depth of discharge also counts for the degradation of the capacity of the battery. Lastly, a high rate of charge reduces battery life, by heating the battery or caused by the lithium plating.

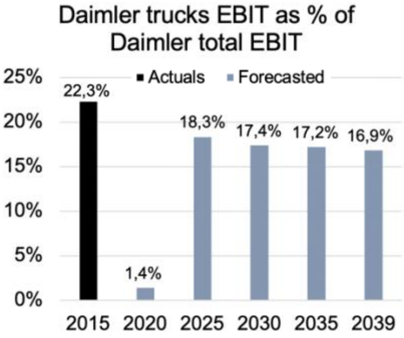
Batteries also bring ethical issues. Cobalt is mainly mined from the Democratic Republic of Congo, which has been targeted by ONG for child labour. While China is producing two-third of the graphite's supply, the working conditions have no or poor standards and trigger diseases to workers, such as the silicosis. The extraction of copper in Chilli, at the Chuquicamata mine, triggered a rise of lungs cancers cases in the nearby villages. In the coming year, it is forecasted that copper demand will overpass production. The extraction of the metal is water-intensive. The pollution created while manufacturing the batteries is a serious threat to EV mobility. The technologies need rare metals, and an increase in demand would be problematic in terms of resources available. Nickel, cobalt and lithium are rare. Finding efficient recycling solutions is therefore important.

- The dawn of hydrogen

Could hydrogen be an alternative? The system of a hydrogen car is composed of a tank with compressed hydrogen and a fuel cell stack. The hydrogen passes through the catalyst made of platinum and splits the electrons, which gives energy to the motor. The fuel cells, which is the part that converts hydrogen to energy remains very expensive. Hydrogen passenger cars have a higher upfront payment and a higher cost per kilometre than gasoline or electric passenger car. Besides, the refilling stations are very limited in numbers as well as the amount of hydrogen available per day. The lack of infrastructures to store and transport, plus its lack of efficiency make hydrogen passenger cars not the best alternative to combustion cars. As of today, most of the hydrogen is produced from coal or natural gas. Companies like Kubagen are working on getting more efficient hydrogen storage materials to bring the cost down and the range higher. Hydrogen would be a better-suited solution for the long haul and heavy transportation, where using batteries takes too much space in the truck. **We concluded that as per today, the hydrogen technology is in its experimentation stage, but investors should monitor its evolution.**

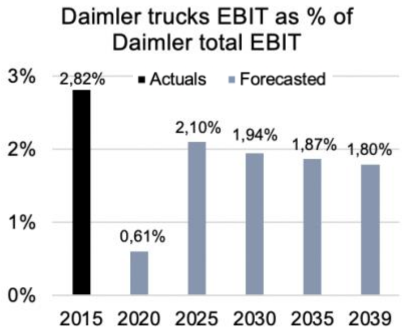
- What’s next for trucks and buses

The market projections for the trucks in the macroeconomic environment are overall positive. According to McKinsey, the market is forecasted a CAGR 0.6% in volume, 2.8% in revenue and 2.9% in profits between 2017 and 2030. We are convinced that Daimler will focus on efficiency, as manufacturing and infrastructure costs are rising for the past two years. Structural volume and price will grow at a stable 1%. We forecasted that COGS will represents 84.7% in 2020, and will decrease for the next years to stabilize at 79.2% in 2025.



Source: Own estimations

The demand for Daimler’s trucks in 2019 were lower than 2018 by 5.6%. We forecasted that with the COVID-19 pandemic, sales in 2020 will decrease by 30%. Yet in the next couple of years, a recovery has been forecasted. From 2023 to 2039 a stable growth in unit sales is forecasted at 1%. In terms of geography, no noticeable changes are forecasted. **We believe that the main opportunities rely on the evolution of digitalisation and the development of new technologies and software, which will increase profits of the aftersales service.**



Source: Own estimations

The other opportunities for the trucks & buses division are related to autonomous driving, alternative powertrains, and connectivity & solutions. The best alternative powertrain depends on the purpose of the vehicle: fuel cell has an advantage for long haul service because it charges faster and has higher range than lithium-ion batteries. Other alternatives to diesel are (lithium-ion) batteries, compressed/liquified natural gas (LNG/CLG), synthetic fuels, and biofuels. **We believe that the batteries and hydrogen-based fuel cell technologies are to more probable to compete with diesel.** More specifically, the hydrogen should be used for long haul, while the batteries would be more efficient in cities and short haul. Companies are more incentivized as **the emission regulations are getting more restrictive for the automotive companies.**

eCitaro bus
Source: mercedes-benz-bus.com

In regards of **autonomous driving**, technology is improving the driver’s conditions with speed control or line monitoring per example. A section of this report is consecrated to autonomous driving. The last element is **connectivity**. **We believe that new telemetric technologies will reduce the total cost of ownership**: the routes will be dynamically optimized and avoiding empty journeys, the trucks uptime and productivity will increase.

Regarding buses, urban e-Buses will lead the EV growth. The public is willing to pay for green public transportation in the city, as it reduces pollution and noise. China is leading the E-bus market with on average 100 thousand EV buses bought each year since 2015. The company received the first orders out of Germany for their eCitaro, lunched in 2018, a full electric bus with a range of 170 km. The research is focused on improvement of the range. One way would be to combine with fuel cells, which would increase significantly the range thanks to hydrogen.

However the orders are declining. We believe that this decline is due to the bus fleets in cities in China that are nearly fully electrified. In Europe the orders are increasing, but remain low with less than a thousand of EV bus bought. Last year was the highest with two thousand buses orders. With the COVID-19 pandemic we expect that the bus market will be challenged, but will ultimately grow as more cities are renewing their fleets for EV. The drawback of EV buses is the high upfront investment to renew the bus park and infrastructure. In addition, the range limit reduces the buses activities and as a consequence the total cost of ownership remains high. For the fuel cell technologies, the companies are relying on public infrastructure to transport and stock processed hydrogen. As it is expensive and the city won't build unless there is a significant market. It develops inter-dependence between the city and the OEMs.

We believe that the **market will be impacted by regulations, price competition and better operational efficiency.** Revenues and profits will increase more than volume due to the growth of aftersales business, additional technologies and services. **We believe that Daimler needs to be more efficient on the operations**, **should focus on product cost optimisation and operational efficiency to retrieve normal EBIT margins.** New technologies like digitization, automation and artificial intelligence will continue to provide potential cost optimization.

Daimler’s ground-shaking strategy

The change in the board of management highlights the acceleration of Daimler toward a more sustainable strategy. The new CEO announced a strategic plan for the group. The aim is both to significantly reduce the breakeven point through a drastic reduction in costs and to accelerate the electrification of the German premium brand. The Cars & Vans division is adopting a “profit first, pricing increasing, portfolio focus” strategy. The Trucks & Buses division is adopting a “global market presence, global platforms, innovation leadership and sustainability” strategy. The Daimler Mobility division will reinforce its corporate culture, focus on efficiency and shift its products into online sales.

How to lower the break even point

- Focus on profitable markets & reduce products complexity

The company has spread in too many markets, which led to complexity and has increased costs. Now the company is shifting its goal from being the leader in terms of volume to **maximizing contribution margin.** The markets with lower margins will be reduced, and Daimler will increase its investments in key countries like China. Our projections are in line, as we believe the market is in a contraction phase and automotive companies are aiming an increase in their EBIT margin, which has been decreasing since 2017. The companies with low cash are in danger as the pandemic reduced sales, and investments for sustainable or autonomous transportation are costly.

The high number of products and personalization options in the portfolio of Mercedes-Benz restrained their margin and increased their break-even point. Fixed costs will be decreased thanks to a homogenization of the portfolio. The number of personalization options will be reduced, increasing operational margin.

- Partnerships & dedicated EV platforms

Since 2019, Daimler cooperate with BMW on the “YOUR NOW” joint-venture composed of five divisions: SHARE NOW, a free-floating car-sharing service; REACH NOW, that provides mobility services like car-sharing or paying public transportation; FREE NOW, issues mobility services including taxis, private chauffeurs with rental vehicles, e-scooter; CHARGE NOW, deliver public charge point localization app for EV cars; and PARK NOW, a digital parking service. The cooperation of the Daimler and BMW groups on the development of automotive driving remain uncertain as the companies put their cooperation temporarily on hold only a year after the agreement was signed. They also have created **new partnership with Nvidia for the automated driving**. The trucks segment also focus on **autonomous driving**, and Daimler partners with Torc Robotics in the US.

Daimler acquired majority interest in the company and developed in 2019 a new unit, combining the expertise of the Torc Robotics and the Daimler trucks autonomous technology group. They already presented in 2019 a **series-produced truck** that can break, accelerate, steer and partially drive itself.

The company developed a **dedicated platform for full electric SUV**. The company announced in 2020 a **second EV-focus platform** focused on compact and medium size name is Modular Mercedes Architecture (MMA). Both platform are skateboard designed to optimise weight and provide great aerodynamic to the cars. It is forecasted that the entry-price cars will be electrified last, when the cost of battery will be lower, because the contribution margin are lower in this segment.

- The impact on headcount and unit sales

The company aims to reduce its size in terms of headcount and number of cars sold. We believe that the simplification of Daimler's structure will reduce fix costs as the number of headcount is decreasing. Regarding the number of cars sold, we believe that a slower growth is possible but not a decrease in absolute numbers: As per our assumptions, Daimler will make efforts to reduce its investments from markets with fewer growth potential such as the US. But the Chinese growth and the mature and stable European market will increase the total car sold worldwide at 2.42% CAGR for 2021-2039 while it was 4.50% for 2015-2019.

How to focus on the premium market

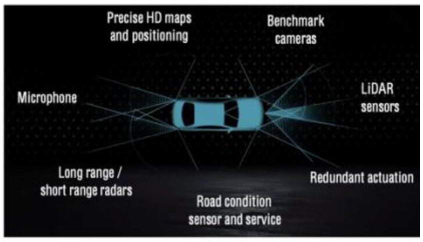
- Focus investment on the higher classes

The company is still retrieving its value perception after the Dieselgate scandal, and must affirms its position as leader of the premium segment. We believe that the A and B class cars will be the most left apart for the next years, with a forecasted reduction of 0.5% points per year, dropping from 22.1% in 2019 to 13.0% in 2039. The company should **focus on the higher end segments in order to increase margins**. Daimler's EQS model will be the first sedan to be sold in full electric in 2021 and will become the flagship vehicle of Mercedes-Benz: Electric, performant, and partially autonomous. The EQS will be able to charge up to 250 km of range in only 15 minutes. In addition, we believe that the SUVs will continue to be trendy and in terms of unit sales will represent 43% of total sales in the end of the forecasted period. The platform for EV-SUVs is created (EQC model is already available for 80k euros) and we expect an acceleration of EV-SUVs sales once the price premium will decrease. This is also an opportunity for Mercedes-Maybach, which is selling well in China.

EQS model
Source: mercedes-benz.com

- Innovative technologies

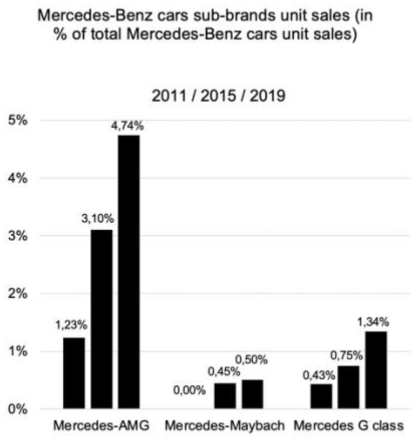
In terms of innovation, biometric, LiDAR technology, road conditions sensors, face recognition, 3d display, over-the-air updates, cars connected to owner's house are examples of technologies that Daimler focuses on. Regarding its OS, Daimler chose to use **proprietary OS** and not outsourced OS. Called MB.OS, it will help the company to have **digital current revenues.** It will partially be an on-demand subscription that unlock applications and divers features in the vehicle. While we consider technology and infotainment important for the future, we believe that this business model will have a negative impact on the brand's perception, especially in China. Daimler should be concerned about their development of a paying subscription to access functions, as internet and connectivity are low-cost in China per example. Starting in 2024, the OS will learn on its own from the car's feedback. Daimler did a partnership with Salesforce to improve customer experience service.



Technologies integrated in the new S-class
Source: Daimler's new strategy update, oct. 2020

- Importance of the sub-brand

The importance of the sub-brands is crucial. **Mercedes-AMG CAGR sales is 27%** between 2011 and 2019. Mercedes-AMG increased its sells units from 17k to 113k. The sportive sub-brand will see its portfolio going electric. The performance sub-brand is specialised in internal combustion engine, which threaten its position. **The demand of Mercedes-Maybach**, the exclusive sub-segment, comes mostly from China which has great **growth potential**. Sales in China represented 29,1% of total sales in 2019 and is forecasted to reach 53.3% in 2039. Maybach's position is an advantage for Daimler in China. **The G class**, adventure sub-brand, had more demand than the capacity of production. It had **double its sales in 4 years**, from 15k in 2015 to 32k in 2019. Regarding the recent sub-brand EQ, the full electric vehicles one, Daimler has already took initiatives with the release of the EQC, EQV and the **S-class full electric model in 2021 (EQS).**



Source: Daimler's new strategy update, oct. 2020

Conclusion on Daimler's strategy

To conclude we believe that Daimler will have to excel while facing a sluggish market, a need to internally restructure costs to be more efficient and a will to reinforce its luxury positioning while transforming its portfolio to EVs.

- A sluggish market

We forecasted that Daimler will close the year with a total revenue decrease of 12.5%. The sanitary crisis reduces all activities and this drop in revenues will be felt by all stakeholders in the automobile market. Despite this crisis, we believe that Daimler will be resilient thanks to its borrowing capacities and costs reduction plan already in place since 2019.

- A need to restructure costs

This costs saving plans will help the company to invest in new technologies. Electric vehicles are on the rise, and it is a race for the market share where not only traditional constructors (Daimler, BMW, Audi) but also new disruptive one (Tesla, Lucid Motors, Nikola Motor) are competing. **Alternative mobility seems to have a more cooperative environment.** Daimler's and BMW's cooperation might be the best solution to experiment the mobility of tomorrow. Companies seems less keen to share knowledge regarding autonomous technologies.

- A will to reinforce to luxury positioning

Regulations and governments incentives are forcing automobile manufacturers to change their portfolio. Daimler has a competitive advantage the premium segment, where it historically belongs thanks to the comfort and the performance of its vehicles. As a premium manufacturer, they should focus firstly on high-end classes in the SUVs and sedans categories, which has customers with high purchasing power and willing to pay the price premium. In addition, we believe that Daimler will focus on the Chinese markets, where it already has a good position. The Knight Frank's Wealth Report of 2020 projects that Asia will be the region with the highest growth of HNWI (+39% between 2019 and 2024). The BCG's Global Wealth Report of 2020 also affirms that Asia will have the highest wealth development between 2019-2024 regardless of post-COVID scenarios impacts. Daimler decided that **the development of the battery will be in partnership** with the Chinese battery manufacturer Farasis Energy, securing battery supply.

Wealth development by region, per scenario, CAGR 2019-2024			
Location	**Lasting damage**	**Slow recovery**	**Quick rebound**
North america	-0,6%	2,0%	3,7%
Western Europe	1,6%	2,6%	3,6%
Asia	5,1%	6,4%	7,4%

Source: BCG, Global wealth report 2020

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