

**MASTER OF SCIENCE IN  
FINANCE**

**MASTERS FINAL WORK  
PROJECT**

**EQUITY RESEARCH:  
DAIMLER AG**

**FREDERICO BRITO DA COSTA BARBOSA DE SOTOMAYOR**

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## Abstract

Daimler AG is an international German company that operates on the automotive industry, being a worldwide leader in manufacturing trucks and the tenth in passenger cars. The company is a world leader as a premium brand with sales accounting for 3,37 million of vehicles in 2018.

The main objective of this project is to evaluate Daimler AG shares and calculate the company value, according to the structure and recommendations of CFA Institute. The reason behind the choice of this company is mainly justified by my interest in the automotive industry as well as the curiosity obtain by a brief work experience in this company. This report was written on July 30<sup>th</sup>, 2019, in accordance with public information, meaning that any information available after this reference date will not be considered on this valuation.

In accordance with the Discount Cash Flow method, the price target was €44.45 on the reference date with a down potential of 5.91%. In order to support the valuation, a Comparable multiples method analysis was conducted, which generated a more pessimistic scenario with a down potential of 20.61%. The auto industry market is under a strong uncertainty, where a number of big firms are restructuring their portfolio in a suddenly way. With this is mind and also with the evaluation made on Daimler AG, it was considered a high-risk investment, where my recommendation for the company is to Reduce.

JEL classification: G10; G32; G34;

Keywords: Equity Research; Evaluation; Daimler AG; Auto industry; Leader; Price-Target; Risk

## Resumo

A Daimler AG é uma empresa alemã internacional que opera sobre a indústria automóvel, sendo a maior fabricante de camiões no mundo e a décima maior em automóveis de passageiros. A empresa ocupa uma posição líder no mundo como marca premium de automóveis com vendas de 3,37 milhões de veículos em 2018.

O objetivo deste projeto é avaliar o valor das ações da Daimler AG e calcular o valor da empresa, obedecendo à estrutura e recomendações do CFA *Institute*. O motivo pela escolha da empresa deve-se ao interesse pela indústria automóvel assim como pela curiosidade ganha aquando uma breve experiência profissional na mesma. Este relatório foi elaborado a 30 de julho de 2019 de acordo com informação pública, na medida em que, qualquer informação disponibilizada após esta data de referência não estará considerada na avaliação.

De acordo com o método de avaliação *Discounted Cash Flow*, o preço-alvo na data de referência foi de €44.45 com um potencial de descida de 5.91%. De forma a dar suporte à avaliação, o método de avaliação comparável através de múltiplos representou um cenário mais pessimista com uma potencial descida de 20.61%. A indústria automóvel encontra-se perante uma forte incerteza no seu mercado, onde todas as grandes empresas estão a mudar o seu portfolio de forma repentina. Foi considerado, com o sustento também da avaliação feita à Daimler AG, um risco de investimento elevado donde a minha recomendação para as ações da empresa é de reduzir.

Classificação JEL: G10; G32; G34

Palavras-Chave: Avaliação; Daimler AG; Indústria automóvel; Líder; Preço-Alvo; Risco

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## Daimler AG

(2019YE Price Target of €44.45 (-5.91%), with Low Risk; Recommendation is to reduce)

### 1. Research Snapshot

Based on the analysis conducted on Daimler AG, the outcome is a REDUCE recommendation at 30 July of 2019 with price target of €44.45 for 2019YE, representing a downside potential of 5.91%, using the Discounted Cash Flow Method. The use of relative valuation demonstrated a more pessimistic scenario, in which the target price is €37.50 generating a SELL recommendation with a downside potential of 20.61% with Low risk. With the constant uncertainty in the automotive market and the change to alternative powered vehicles the risk to invest in this market increases as well as opportunities.

Figure 1: Historical Stock Price



#### Well established player in the automotive market

Daimler is most known for his Mercedes-Benz brand, however the company is an overall global brand with strong diversified portfolios across different divisions besides automotive, such as Vans, Trucks, Buses and Financial services. Besides the uncertainty in the market, the company is showing back to back increases on revenues every year, reaching a total of almost 3,4 million vehicles sold in 2018.

#### New corporate strategies and leadership

Since May 2019, Ola Källenius is the new chairman of Daimler AG. With this change in command, a global reorganization of the company will take place which will involve 800 subsidiaries in more than 60 countries. This will put Mercedes-Benz AG ahead of Mercedes-Benz Cars and Mercedes-Benz Vans divisions, while the division of Daimler Trucks and Buses divisions will be managed by Daimler Truck AG.

#### High Investment in Research & Development

The investment in R&D is, nowadays one of the top figures to identified if a company is getting prepared for the future. In the past 4 years Daimler almost duplicated the money invested in R&D reaching 9.1 billion in 2018. The objective is that by the year 2025, the sales of electric vehicles account for 25% of the company sales overall.

Table 1. Daimler Market Data 30/07/2019

Market Profile	
Closing Price (30 July)	€47.24
52 weeks price range	€44.77 - €59.34
Shares Outstanding	1,070 billion
Volume	9,244,811
1-year return	12.10
Market Capitalization	50,54 billion
P/E	6.8

Source: Reuters, students estimates

Table 2. Daimler Target Prices (2019YE)

Valuation	Price Target
Current Stock Price (30-07-2019)	€47.24
DCF	€44.45
EV / Sales	€37.50

Source: Students estimates

## 2. Business Description

### Company Profile

Best known as the manufacturer of the luxurious Mercedes-Benz, Daimler AG is a German company with headquarters in Stuttgart. Daimler AG is a world leader in manufacturing commercial vehicles and one of the biggest producers of premium cars. Beside automobiles Daimler AG manufactures trucks, vans, busses and provides financial services. With its origins tracing back to 1886, when the company was grounded by its founders Gottlieb Daimler and Carl Benz, later they merged with Chrysler Corporation in 1998. In 2007 Daimler declared the sale of Chrysler to a private equity announcing Daimler AG as the new company title.

Today Daimler AG operates all around the world selling vehicles and services and have production facilities in Europe, North and South America, Asia and Africa, being present in the Frankfurt stock exchange – Table 3.

The structure of Daimler was recently revised and improved (2019 annual shareholders meeting) to prepare the company for the challenges and opportunities of the new automotive era. The new structure divides Daimler in three companies (Daimler Mobility AG, Daimler Truck AG and Mercedes-Benz AG), however the responsibility to exercise corporate governance, strategy and management functions and provide cross-divisional business services lies with the parent company Daimler AG. The primary divisions of Mercedes-Benz AG are passenger cars, which include Mercedes-bens cars & vans, Smart, Maybach, AMG, Mercedes Me and EQ but also commercial cars.

In order to complement the manufacturing business, Daimler Financial Services provides financing, leasing, investment products, fleet management and brokerage of credit cards and insurance, as well as innovative mobility services.

As of December 31, 2018 Daimler's employees totaled to 298,683, a 3.2% increase from previous year (289,321), mostly due from the result of the positive overall business situation – Figure 2

The unit sales of the company overall have increased in 2018, Mercedes-Benz cars sold a record of 2,4 million cars maintaining its position as the leading premium brand. The highlights of the year (2018), were the launch of the first all-electric Mercedes-Benz car, the EQC and the increase focus on the smart electric, which doubled the sales from 2017 – Figure 3

The Mercedes-Benz vans also reached a new record with 421,000 sales (5% increase from 2017) marked with the increase number of orders for the new Sprinter, where Amazon alone ordered 20,000 units.

Regarding Daimler trucks, the launch of the new Mercedes-Benz Actros set the scale in order to increase 10% in sales versus the year 2017. The grow was solid in Europe, but it was in North America, Latin America and Asia where the growth was significantly.

Daimler buses also increase its sales by almost 10%, the launch of the eCitaro which offers an effective solution for improving air quality in cities, was one of the reasons that justified this upward trend in sales.

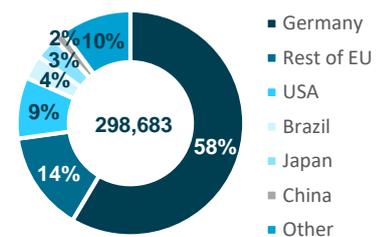
When comparing the numbers of Daimler's unit sales with the Global unit sales growth in 2018, the company from Germany increased by 2.4% while the global car

Table 3. Daimler's Brief Profile

Type	Public
Traded as	Frankfurt stock exchange: DAI
Headquarters	Stuttgart
Products	Automobiles and commercial vehicles
Services	Financing, leasing, fleet management and investment products
Nº of employees	298,683 (2018)
Financing reporting	IFRS accounting

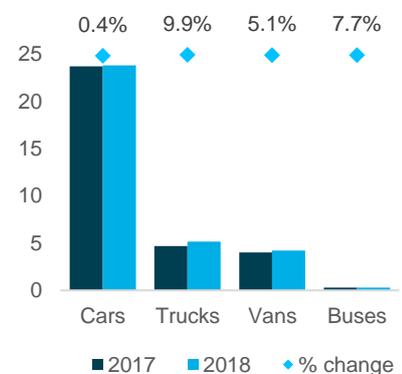
Source: Company Data

Figure 2. Employees by region



Source: Company Data

Figure 3. Daimler million sales by segment



Source: Daimler AG Annual Report 2018

sales decreased by 0.5% (source: Jato), enhancing the gain of market power of Daimler.

Daimler revenue showed an upward trend comparing to last year (2017), where the economic growth was close to 3.4%. Europe is Daimler’s biggest market, however due to the current economy with the decreased of foreign trade, was unable to continue the development of 2017 and grew less than 0.3% - Figure 4. On the other hand the US economy with the help of fiscal policies, made Daimler revenue of NAFTA region to reach 3.1% of increase in revenue when comparing with the year 2017. Although Daimler revenue from Asia reached 3.9% increase, it was smaller than 2017 since China economic growth slowed due to low credit growth.

Regarding unit sale structure, Europe is also ahead, representing 41% of Mercedes-Benz cars sold in 2018 (Figure 5), followed by Asia with 39% and NAFTA with 16%. Daimler Trucks, besides being a part of the same company, have a completely different structure, with the American Region (NAFTA) representing more than one third of sales. Europe falls short with just 17% and Asia increasing every year, with 32% in 2018 – Figure 6.

**Company Strategies**

Daimler is currently facing the biggest transformation in its history by implementing the “Mercedes-Benz” growth strategy 2020 (5C strategy) – Figure 7. The objective of this strategy is to prepare the company for the challenges and opportunities associated with the new age of mobility. This strategy is supported by four components (Figure 7) that establish the conditions needed to ensure the focus on the requirements of the customer:

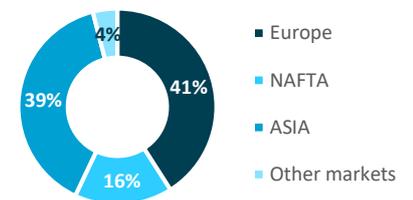
- 1) Strengthening Daimler’s **CORE** business is the goal based on the global growth in all vehicle segments. Mercedes-Benz cars will focus on different technological approaches in a market moving to emission-free driving. These strategies pass from improving modern combustion engines, expanding hybridization and emission-free vehicles with batteries and fuel cell. Daimler trucks set the target to achieve permanent savings of 1,4 billion euros by 2019 with projects such as the product program in Brazil and vehicle connectivity in São Bernardo do Campo and Juiz de Fora. Regarding Mercedes-Benz vans the objective is digitize the global manufacturing operations by 2025 and in order to achieve it, Daimler is focusing on market strategies for global growth, product strategies for expanding the portfolio and future initiatives. Daimler buses are following the same line as the vans, focusing also on increasing efficiency on several manufacturing locations and development expertise in the fields of electric mobility, connectivity and autonomous driving. The financial services will, by the end of July 2019, be called Daimler Mobility AG and will continue to grow around the world. In the end of the year (2018) about half of the vehicles delivered by Daimler are financed or leased by Daimler financial services, and Daimler’s strategy is to improve the digitalization of its processes in order to see this number growth even higher.
- 2) Continuing to be a leading company in CASE (connected, Autonomous, Shared&Services, Electric) fields which means leading in new future fields, such as driving and safety systems for automated autonomous driving, digitization and connectivity. Mercedes-Benz cars will keep investing on a more intuitive Mercedes-Benz User Experience (MBUX) which is a technology in an infotainment that increases the user experience and adapts

Figure 4. Daimler Revenue by region



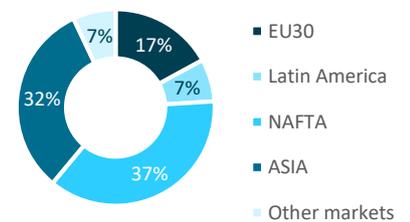
Source: Daimler AG Annual Report 2018

Figure 5. Unit sale structure of Mercedes-Benz cars



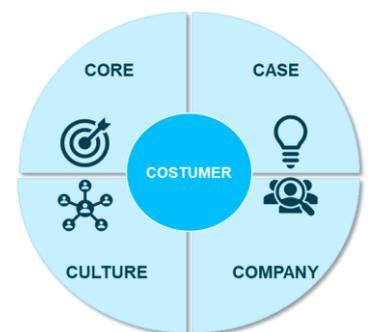
Source: Daimler AG Annual Report 2018

Figure 7. Unit sale structure of Daimler trucks



Source: Daimler AG Annual Report 2018

Figure 6. Strategy Structure



Source: Company Data

to suit their needs. The focus autonomous driving is accelerating with various partnerships being made like HERE for high-resolution digital maps and with Bosch for the joint development of technology for fully automated driving and driverless vehicles. Regarding Daimler trucks the objective is to create a seamless transport logistics system, being the first manufacturer to offer partially automated driving. Daimler buses intends to invest in bringing together all of its current and future digital services on the OMNIplus ON digital portal (to ensure customers to keep moving in safety). Daimler is continuing to invest in developing the business with fleets of automated and autonomous vehicles by partnership with car2go (flexible car-sharing services)

- 3) In order to adapt the corporate CULTURE, Daimler will continue to focus on promoting the development of innovations through the use of modern techniques such as scrumming and design thinking. The development and implementation of new business ideas and innovations help the creation of digital solutions.
- 4) The focus on the costumer and market structure (COMPANY) will have a considerable change by 2019 (Figure 8), where Mercedes-Benz cars and vans will be incorporated into Mercedes-Benz AG. The Daimler Trucks and Buses divisions will be named Daimler Truck AG with the objective of making them more independent. Daimler Mobility AG will be the new name for Daimler Financial Services.

### Fit for leadership strategy

The world is changing rapidly as well as the way work is done, the way information is obtained, and communication is made. Everything is taking place in real time, becoming faster and more direct.

It's important in these days to sense the new megatrends (Big Data, Digitalization, Artificial Intelligence, etc) early and understand their implications quickly and powerfully. The same situation happens with the search for new competitors, especially those that offer an innovative substitute product such as Tesla, Uber, Google, etc. With all this is mind, Daimler redesigned the “fit for leadership” program that focus on establishing a new management culture with knowledge and preparation for the new future in order to ensure the future success of the company – Figure 9.

### Mercedes-Benz IO and new showroom's

In 2017, Daimler set up the world's first digital competence center and elected Portugal has the “driver” to this hub. The principal objective is to develop Daimler’s worldwide e-commerce platform as well as the implementation of new services and the expansion of business models. The new subsidiary will focus on developing customer-oriented solutions and improving customer experience with digital channels.

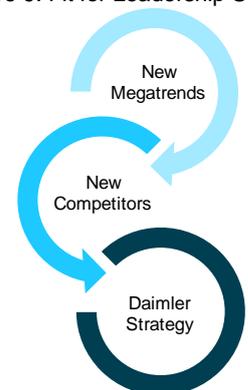
The digitalization is changing the way the business is done and costumers around the world expect to be able to interact online with their brands anywhere and at any time. Daimler’s estimates that, by 2025, 25% of the vehicles sold will be online. Besides this estimate, Daimler wants to continue to invest in stands with the program “Best Customer Experience 4.0”. The idea is to transform each stand in a point of experience with the use of new technologies to make easier and intensive the contact between clients and products.

Figure 8. Company setup



Source: Company Data

Figure 9. Fit for Leadership Strategy



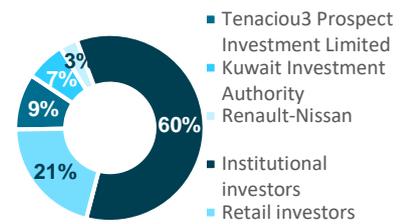
Source: Company Data

**Shareholder Structure**

On March 2019, Daimler share capital amounts to €3,07 billion which comprise of 1,069 million shares outstanding. Daimler's has a broad shareholders base which can count with almost 1.0 million shareholders. Tenaciou3 Prospect Investment Limited currently owns 9.7% of the company's shares, becoming Daimler AG's largest individual shareholder since February 2018. Accounting with 6.8% of the total shares outstanding is the Kuwait Investment Authority (KIA), followed by Renault-Nissan with 3.1% - figure 10.

The board of management remuneration is categorized in three components: the fixed base salary and the annual bonus each comprise approximately 30% of the target remuneration, while the other 40% correspond to the variable component of remuneration with a long-term incentive effect.

Figure 10. Shareholder Structure



Source: Company Data

**3. Management and Corporate Governance**

**Corporate Management**

The Board of Management of Daimler AG is responsible, according with the objectives of the company, to direct, coordinate and control the business activities.

Ola Källenius is Daimler's newest chairman. In May of 2019 the former CEO, Dieter Zetsche, stepped down after leading the company for the past thirteen years. This change of command was made in response to challenges presented by the transformation of the automotive industry, since Ola Källenius was overseeing the research and development department.

**Corporate Governance**

In order for Daimler to continue its success and increasing the trust from clients and investors, needs to keep having a transparent and responsible corporate governance. Daimler is obligated to apply a dual management system, where the Board of Management has the duty to manage the company and the Supervisory Board guides the Board of Management (Figure 11).

The Board of Management has the obligation to prepare the financial statements, the consolidated interim reports, and other reports for the company and the group. The Supervisory Board besides monitor and advising the Board of Management, reviews the annual financial statements and revise the objectives outlined to report to the annual shareholders meeting.

Figure 11. Governance structure



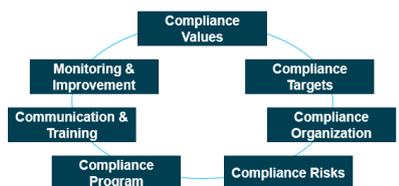
Source: Company Data

**Compliance Management System (CMS)**

Compliance means acting in conformance with laws and regulations, and Daimler's objective is to ensure that all employees work in conformance with these laws and regulations. Daimler's compliance promotes rule-based behavior using a set of principles and measures (Figure 12). The objective of these principles is, among others, to avoid inappropriate or illegal behavior from the employees, conformance with laws and regulations and reduce compliance risks and prevent violations of regulations and laws.

Having Daimler a financial institution, the need to be aware and prevent anti-financial crime is obvious, so there is a compliance goal that as the objective of preventing money laundering. This objective is achieved with the implementation of anti-money laundering measures that are defined and updated every year. The implementation of anti-money laundering (AML) and counter terrorist financing (CTF) policies serves

Figure 12. Compliance Management System (CMS)



Source: Company Data

to prevent not only the negative impact on society but also a possible long-term damage to Daimler's reputation.

The Human rights compliance is a fundamental component of responsible corporate governance for Daimler. There is a constant expansion for the Human Rights Respect System (HRRS) that follows a set of standards and guidelines for environmental protection, safety, business ethics and working conditions.

## 4. Industry Overview and Competitive Positioning

The automotive industry, despite trending towards efficiency and sustainability, is worth more than 250 billion dollars worldwide. There is an enormous car culture across the globe making this industry a key engine of a macroeconomic growth. This industry it's not just selling cars, it involves also areas such as manufacturing, repair and design. It also links to other sectors, having an important multiplier factor in the economy.

The number of passenger car registrations decreased by 0.5% in 2018 to 79 million (Figure 13), justified by the political changes in key markets (Brexit) and introduction of some complex environmental regulations. Since the financial crisis in 2008, the auto market has recovered almost 100%, currently facing a number of different trends such as electric, hydrogen and self-driving vehicles.

### Industry Overview: European Union

The highly uncertain outcome of Brexit remains the key risk in the economy. The GBP is decreasing to history minimums (Figure 14), mainly because of the Brexit situation, according to a study made by Deloitte the CFO's of the major companies in England are responding to this threat with their companies most defensive strategy. These strategies were last use in the financial crises of 2008 and the result is mainly the cost reduction and cash control.

The European Commission forecasts for GDP Growth, inflation and unemployment in Europe are expected to be stable until 2020 which is positive signal considering that all of these variables are in a good position. The number of passenger cars registrations remain stable in 2018, however the variation each year has been decreasing since 2016 (Figure 15) representing that the market is slowing down. On other prospective, 2018 marks the 5-consecutive year of positive variation. Regarding fuel types it's possible to see a drop of close to 18.3% in diesel vehicles, justified with the diesel crises which led to an increase of registrations of petrol-fueled vehicles by 12.8% and an increase of 30.4% of alternative powered vehicles.

### Industry Overview: America

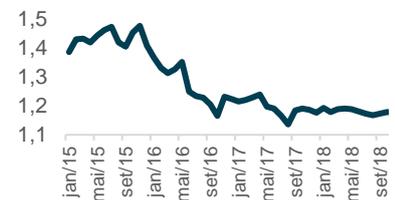
During 2018 the world economy faced a loss momentum that was driven in 2017, despite of the global real GDP growth remains the same at 3.8%. The main reason behind this loss is the implementation of tariffs by major economies, such as the United States. Despite of the actions mentioned, the US economy growth considerably in 2018 justified with tax cuts that stimulated demand, which made the US federal reserve to raise the policies of interest rates. As a result the US dollar appreciated against most of the other currencies. A few financial crises in South America are getting quite significant, Argentina with the drop of pesos by close to 80% in the past 5 years. Another financial crisis to notice is in Venezuela, that with

Figure 13. Passenger car registration



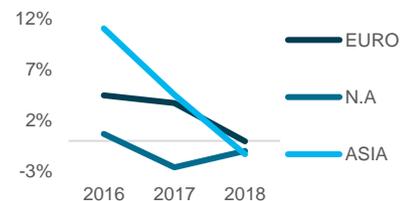
Source: IHS, ACEA-ACEA Economic and Market Report Q4 2018

Figure 14. Variation GBP to Euro



Source: XE currency

Figure 15. % of variation of passenger car registration



Source: IHS, ACEA-ACEA Economic and Market Report Q4 2018

the election of President Maduro the economy is freefalling, registering a global real GDP drop of 18%.

In the United States, Donald Trump administration claimed in 2018 that the US relies too much on foreign steel and metals. This are the raw materials to produce cars, so there could happen a taxation on foreign steel and aluminum, which will be led to US companies to buy them locally to avoid taxes. The result should mean that car companies would pull up the prices on their finished products, hurting the consumers, that represent a market share of 18% of passenger cars registrations in the world.

### Industry Overview: Asia

The economic growth of Asia and Pacific regions has been the strongest in the world registering an average of 5.5% real GDP growth in the past 6 years (Figure 16) and according to IMF this growth will continue for the next 6 years (until 2022).

The main driver of the Asian economy is exports, especially in China, but considering the constant appreciation of the local currency against most currencies in the rest of the world, there is possibility that Chinese products will be more expensive. If the government does not intervene, it's likely to occur a drop in the demand of Chinese exportations.

China is the leading country in car registrations in the world, accounting with almost 37 million registers, that represent a market share of 29% in the world. However the variation of registrations has been stable for the past 3 years, due to incentives of the government to face environmental problems. On the other hand, the demand for plug-in cars is registering a giant leap, with the growth in sales accounting an average of 100%.

Analyzing the overall situation of passenger cars production, it's possible to see and with no surprise, that China has the leading position, representing almost 30% of world production – Table 4. Besides Germany is the home country for a lot of car brands, the country represents only 4% of the world production of passenger cars. The production of cars in emerging markets is increasing at a high speed, with Indonesia and Thailand as a reference (7.3% increase from 2017 to 2018).

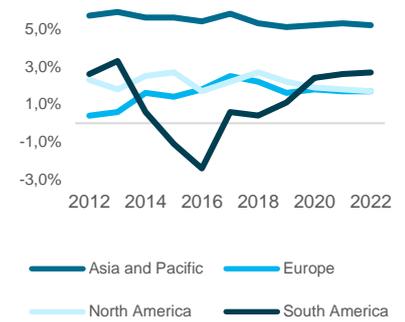
### Industry trends

The idea to make everyone's life easier is the need that every customer wants. A vehicle is now more than just a way of transport, it's a social participation and shapes cities and landscapes. Putting this topic in perspective, the automotive market today, shapes to become more electrified, autonomous and connected. With megatrends such as urbanization, climate, demographic and technological change, the usage behavior is changing to adapt. According to a study made by PWC, in the year 2030, 55% of all new car sales in Europe will be fully electrified representing an obvious trend. Facing the same path as electric vehicles is the autonomous driving, that brings a lot of benefits to costumers such as less time driving in traffic situations, increase in safety and sustainability.

With the car ownership becoming less important as a status symbol, the use of car sharing is becoming more popular and there is much more to invest in this area, for example matching the autonomous driving with car sharing.

These topics mentioned (electrified, autonomous and shared) will lead to an increase in the need to innovate. Typically a car model changes every 6 years and have a "facelift" (same model but with small changes) every 3 years. This timeline is also changing considering that a car with 6 years is far from being updated.

Figure 16. Real GDP Growth Forecast 2012-2022

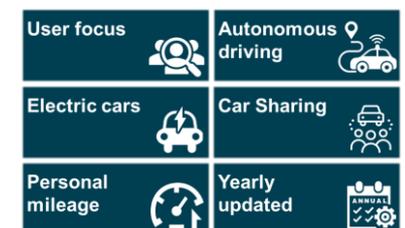


Source: IMF

Table 4. Passenger car production by region in 2018

Country	N° car registrations
China	23,185,905
USA	13,901,586
Japan	4,378,933
Germany	3,435,778
England	2,367,147
Brazil	2,089,105
Indonesia	1,057,426

Figure 17. Automotive sector trends



Source: Student analysis

Personal mileage is expected to increase by 23% until 2030, and also 40% of the mileage driven will be covered by autonomous vehicles, justified by all the trends above mentioned.

**Electric mobility**

The global electric automotive market, in 2017, was valued at \$118,8 billion and is expected to reach \$567,2 billion by 2025. With the constant increase regarding environment issues, electric vehicles are privileged. The year 2018 was marked by a record for the sale of electric vehicles. Passenger electric cars registered 1,26 million sales in 2018 (Figure 18), increasing by 74% from the previous year. This increase can be explained with several factors, starting with the release of the model 3, by tesla, that boosted the sales in the United States. Also, electric cars gained more visibility in the Chinese market due to the promotion by local governments to deal with environmental issues. Since Europe felt, and is still feeling, a crisis in diesel vehicles, that alone helped to raise awareness among consumers about the benefits of driving an electric car.

Plug-in vehicles deliveries account for 2,1 million units in 2018, which represents a 64 % increase comparing with 2017. These vehicles include BEV (Battery Electric Vehicle) and PHEV (Plug-in Hybrid Electric Vehicle), the difference between the two is that PHEV has both a battery and a normal petrol or diesel engine, while BEV is just an electric vehicle powered by a battery. In the past three years (2016-2018) the amount of sales of plug-in vehicles increase more than 400%, representing a market full of opportunities – Figure 19.

Considering the increasing demand for electric cars and the local government support all around the world and Daimler plans to expand its range of electric vehicles over the coming years. Daimler is expecting to launch more than 10 all-electric cars across all segments, assuming that electric cars will account for close to 25% of Mercedes-Benz car sales by the year 2025. One of the main objectives for Daimler is facing one the biggest costumers that clients have today, which is the low number of charging infrastructure. Daimler, with the help of some of its partners, are investing in the establishment of more charging points across all Europe, specifically in the major highways. They are also investing more than €10 billion in the development of battery production and expanding the current electric fleet.

With the production of electric vehicles (consolidated under the new EQ brand), the expansion of production of batteries and all other factors mentioned, Daimler is ensuring that it can face possible changes in demand regarding electric vehicles.

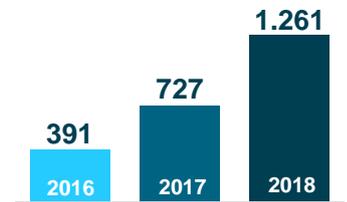
**Hydrogen**

Besides battery electric vehicles, there only exists one more zero-emission alternative which is hydrogen-powered fuel cell passenger cars. The answer to why this topic deserves an analysis, can be address by understanding that it's a market valued at \$193,8 million in 2017 and projected to reach more than \$10,000 million by 2023.

There is no doubt that with the increase proportion of renewable energy, hydrogen will be crucial in the overall energy system making it attractive for the mobility sector, has showed in a prediction by HIS automotive in 2017 (Figure 20).

This sort of technology uses hydrogen fuel for motive power by burning hydrogen in a combustion engine or by reacting it with oxygen in a fuel cell. Alongside with electric power, hydrogen can be produced using wind, solar, nuclear energy, etc. which is enough to separate oil from transport, ending up opening opportunities to improve energy security. This all and all is a strong contribution to the

Figure 18. Passenger electric car sales (thousands)



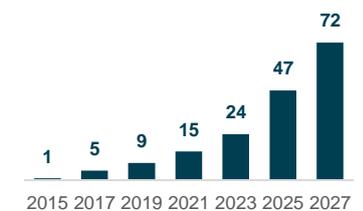
Source: EV-volumes

Figure 19. Plug-in car sales (thousands)



Source: EV-volumes

Figure 20. Hydrogen fuel cell production vehicles (thousands)



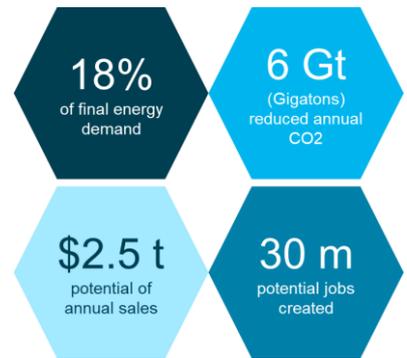
Source: IHS Automotive

decarbonization of road transport. It's important to notice that refueling a hydrogen tank only takes minutes whereas fully charging a battery can take hours.

Daimler stated that “The potential of fuel cell technology, and of hydrogen for energy storage, is beyond question. Hydrogen plays a major role in the discussion of ways in which to reach worldwide climatic target”. The EQ brand is well known by now in the automotive sector, with battery technology, but Daimler keeps investing in fuel cell technology. With the experience gained in the past years, Daimler created the new model GLC F-CELL which is first electric vehicle featuring fuel cell and plug-in hybrid technology. This model is the first in the world where a lithium-ion battery is used as an additional energy source.

The major opportunities for Daimler to invest in this market, besides the already mentioned like short refueling time, are for example less weight added for energy stored and zero tailpipe emissions. Overall, if some challenges can be faced like initial low utilization of refueling stations raises fuel cost, Daimler is getting well prepared to achieve the predictions made for 2050 (Figure 21).

Figure 21. Daimler vision for 2050



Source: Company Data

**SWOT**

Figure 21 summarizes Daimler’s strengths, weakens, opportunities and threats (SWOT analysis). The main strength of Daimler relies on being a market leader in premium vehicles, regarding unit sales is number 10 in the world but still ahead of its main competitor’s – Table 5. The weakness focusses more on the few diversifications of hybrid and electric vehicles on Daimlers portfolio. The possibility of investing in new technologies represents an obvious opportunity in order for Daimler to be ahead in the market. The company faces threats concerning the high competition in the market and its constant uncertainty.

Table 5. Daimler vs competitor’s unit sales

Toyota	8,091,277
Volkswagen	6,746,204
Ford	5,329,290
Honda	4,966,037
Nissan	4,750,863
Hyundai	4,076,913
Chevrolet	3,881,747
Suzuki	3,046,585
Kia	2,638,782
Mercedes	2,551,806

Source: JATO analysis

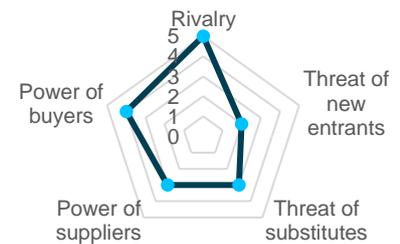
Strengths	Weaknesses
<ul style="list-style-type: none"> <li>Strong Reputation of Mercedes-Benz and Smart</li> <li>High Investment in Research and Development</li> <li>High investment in electric and hydrogen vehicles</li> <li>Diversified geographical presence</li> </ul>	<ul style="list-style-type: none"> <li>Few current diversifications in hybrid and electric vehicles</li> <li>Poor performance of trucks and buses divisions</li> <li>High prices comparing with other competitors</li> </ul>
Opportunities	Threats
<ul style="list-style-type: none"> <li>Autonomous driving</li> <li>Technological advance</li> <li>Increase in demand of hybrid and electric vehicles</li> <li>International expansions and strategic acquisitions</li> </ul>	<ul style="list-style-type: none"> <li>Uncertainty regarding the future of the automotive sector</li> <li>Increasing fuel prices</li> <li>Strong competition among competitor brands</li> </ul>

Figure 21. SWOT analysis

## Porter's five forces

- **Threat of New Entrants (2)** – Daimler has a strong market recognition in the premium segment which is one of the main reasons why this threat is low. With the constant need to evolve and to be technological updated, a high investment in research and development is required in the automotive industry as well as a large investment in mass production.
- **Threat of New Substitutes (3)** – A substitute product for Daimler includes mainly other means of transportation such as the increase of people using public transportation or other vehicles that does not give the amount of satisfaction and luxury than driving a Mercedes-Benz. There is also a possibility to appear a substitute vehicle created by a company rival however, considering that Daimler invests a considerable amount in R&D, has a little edge in this matter.
- **Competitive Rivalry (5)** – Daimler faces a highly competitive market in the premium car segment. To face this constant threat, there is a need to be updated regarding the latest technology trends in order to not fall short with its main rivals such as BMW and Audi. With the excessive amount invested in R&D, there still exists few electric vehicles in Daimler's portfolio making this threat considerably high. Besides its main competitors, there also exists a number of brands that are gaining value in the premium car segment such as Lexus, Volkswagen and Volvo.
- **Bargaining Power of Suppliers (3)** – With a long relationship with suppliers of raw materials and parts, Daimler has a strong negotiation power, which is also supported by the high number of options that currently has in the market. Being Daimler a luxury car brand, it has certain worries regarding the quality of their products making the list of possible suppliers smaller. This last concern is what makes this threat moderate.
- **Bargaining Power of Customers (4)** – Considering that there exists a high number of substitutes the customer has a reasonable bargaining power, on the other hand the loyalty that is shown is also high. The power of customers is also related with the brand's image, considering that owning a Mercedes-Benz gives a high status for the customer. Additionally, the constant need to innovate is a key feature for Daimler considering that the time and effort it takes to gain loyalty is high but the time and effort to lose it is low.

Figure 22. Porter's Five Forces



Source: Student Analysis

## 5. Investment Summary

Daimler AG valuation price is €44.45 at 30 of July 2019YE with the use of two valuation methods. With the use of Discounted cash flow method (DCF), Daimler's target price is €44.45 with downside potential of 5.91% representing a **REDUCE** recommendation. Regarding the relative valuation, the scenario was different giving a more pessimistic scenario in which the target price is €37.50 generating a **SELL** recommendation with a downside potential of 20.61%. The forecast for Daimler's valuation was with a timeline of 4 years, between 2019 and 2022.

With this analysis it's possible to give a sell recommendation with medium risk, but with the high uncertainty in the market and the current development of new trends, new competitors and new challenges, the reduce recommendation is considered to be more appropriate.

Daimler is an automotive engineering company that engages in the production and distribution of cars, trucks, and vans. The Company also provides financial and other services relating to its automotive businesses and is expected to keep the leading position of premium car brand in the world. With the volatility increase in the automotive market regarding the entrance of new alternative source engines, Daimler is expecting to invest more than €10 billion developing battery production and fuel cell technology. The business in some countries in South America, such as Argentina and Venezuela are falling apart due to political and economic uncertainty. Somehow similar path is happening in England with Brexit bringing a lot of uncertainty regarding the possible outcome making the investors insecure.

## 6. Valuation

### Valuation Methods

The method used was the DCF (discounted cash flow) to determine Daimler firm value. This method was chosen because the capital structure of the firm will change in the next years and the basis was Daimler's consolidated financial reports between 2014 and 2018. The main objective is to forecast Daimler's free cash flows for four years, between 2019 and 2022 in order to obtain a valuation price. Being a method preferred by analyst and investors worldwide the valuation was made analyzing Daimler's free cash flows (FCF's) and using the adjusted present value. The WACC model (Weighted average cost of capital) was used since the company has a debt-to capital ratio constant over time (Damodaran, 2002). This model is also supported by Goedhart, that stated that the WACC model should be used when valuating firms with several businesses, which is the case of Daimler (cars, vans, trucks, buses and financial services). The WACC model uses a constant tax rate to estimate the tax-shield, opposing with the APV model that uses period-by-period.

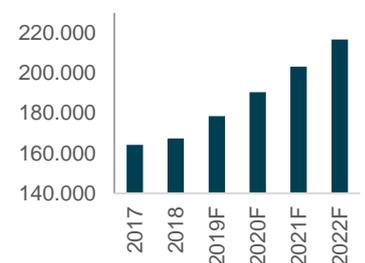
To support the valuation of the DCF method, a computation of a relative valuation was also made. A relative valuation as the goal to compare values of similar companies in the market assuming that substitutes and comparative assets should have the same price (Baker and Ruback, 1999). The first objective is to search for a peer group composed by companies with a similar business than Daimler, then a comparison is made on the multiples in order to identify and analyze differences.

### Revenues

Considering that Daimler offers a broad portfolio of vehicles, the forecast of sales revenues is complex. With the increase in sales of electric vehicles, Daimler is and will continue to diversify its portfolio, making a forecast of strong sales for the upcoming years. Regarding revenues of combustion vehicles, despite the sales in the industry decreases in the past year, justified with electric vehicles, the sales of Daimler increased by 2.4%, which proves the strong performance of the brand. With the launch of the new EQ model in the beginning of 2019 and more upcoming electric vehicles Daimler assumes that by 2025 25% of sales are electric. A historical data for the past 5 years proved that Daimler revenues increased by an average of 6,7%. China is the main driver for Mercedes-Benz sales, and it will continue to be with the government incentives for electric vehicles, continuing the current market share.

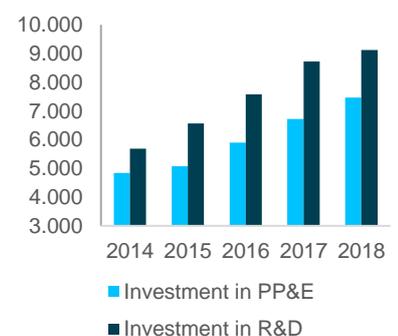
To support the assumption, a deeper analysis was made regarding Daimler sales and current market share. The main challenge in the automotive industry is regarding the amount of technology that a vehicle has, which is something that budget vehicles are increasing quite significantly. This puts pressure in premium brands, such as

Figure 23. Revenue Forecast



Source: Students analysis

Figure 24. Investment in R&D and PP&E



Source: Students analysis

Mercedes, to always be ahead of competitors in order to differentiate themselves. Daimler is increasing every year the amount invested in research and development and property plant and equipment in order to be ahead of competitors in an upcoming future (Figure 24)

### Net Debt

Daimler's net financial debt is expected to reach €100 billion in 2019, which is mainly comprised with the issuance of bonds and bank credit with interest rates approximately 1.6% and 2.8% respectively. When analyzing the selected peer's group (Table 6), it is possible to note that Daimler is the second most indebted company in book value terms, which can bring a lot of uncertainty to investors. In market value terms the situation is the same (Table 7), being very above the average of the peer group with an interest coverage lower than the peer group and with a debt to enterprise value higher.

The same path is followed when analyzing the how easily can Daimler pay interest of its outstanding debt, with an interest coverage of 14.04 quite below the average. Finally, the ability to pay short term obligations (current ratio) is also low comparing to the peer group. Debt to assets and debt to enterprise value should in the upcoming years improved considering that is expected a growth in the company value and Daimler don't intend to issue more debt, maintaining the credit rating at grade A.

### CAPEX, Depreciation & Amortization

Capex is related with the amount invested by Daimler, especially in new projects. Considering that the automotive industry is facing a complete change with new technologies and also BEV and PHEV vehicles, the amount of capital expenditures is clearly expected to increase. The electrification of the portfolio and digital connectivity are the company's main growth targets. Considering that the amount invested in PP&E, capitalized development cost and other financial investments, is almost the same every year, the predictions were calculated using historical data.

Depreciations, Amortizations, Provisions and Impairment were calculated using an average of the historical data.

### WACC Assumptions

The cost of equity was computed using the WACC method (Weighted average cost of capital) to estimate the costs to finance investments through equity or debt.

The risk-free rate used was the yield to maturity of Germany government bonds with 10 years maturity and the value obtained was 0.24%. Considering that Daimler is based in Germany, being a mature market and having a credit ranking of AAA, the country risk premium is 0%. The market risk premium represents the total equity risk of the countries where the firm has operations and the value considered was 5.96%, achieved through the support of Damodaran calculations (1 Jan of 2019).

To evaluate the stocks volatility it's necessary to calculate the systematic risk also known as Beta. The leverage beta was obtained multiplying the unlevered beta (retrieved from Damodaran 2019) of 0.34 by the marginal tax rate of 10.15 and the net debt divided to equity ratio. Daimler's leverage beta was 0.88 and consequently the expected cost of equity was 5.59%.

Daimler's cost of Debt was assumed at 4.18% taking in consideration Damodaran's computations for auto & truck industry. The tax margin of 10.15% followed the same assumption take the cost of debt.

Table 6. Debt analysis (1)

	Debt to Assets	Current ratio
Daimler	51.5%	1.24
BMW	41.3%	1.18
Ford	60.1%	2.00
Honda	35.9%	1.23
Toyota	38.8%	1.04
Volkswagen	42.0%	1.13
Nissan	42.4%	1.50

Source: Wall Street Journal

Table 7. Debt analysis (2)

	Interest coverage	Debt to EV
Daimler	14.04	85.7%
BMW	38.58	71.0%
Ford	2.26	19.0%
Honda	54.96	70.0%
Toyota	87.26	58.0%
Volkswagen	18.74	90.0%
Nissan	23.61	76.0%

Source: Wall Street Journal

Table 8. WACC Assumptions

Cost of equity	
Risk Free Rate	0.2%
Country Risk Premium	0.0%
Market Risk Premium	6.0%
Beta Levered	0.90
<b>Cost of Equity</b>	<b>5.6%</b>
Cost of Debt	
<b>Cost of Debt</b>	<b>4.2%</b>
Marginal Tax Rate	10.1%
After-tax cost of debt	3.8%
Capital Structure	
Weight of Equity	31.3%
Weight of Debt	68.7%
<b>WACC</b>	<b>4.33%</b>

Source: Students analysis

According to the variables mentioned the WACC determined was 4.33%, which underlines the company's capital source. It was assumed to be stable for the forecasted years. According to IMF World Economic Outlook 2019, the terminal growth rate was assumed as 1.40%, value based on the forecasted Real GDP growth rate for Germany in 2022F.

### Selection of Peers

The selection of a Peer group for Daimler financial analysis was conducted using a three-step method. Starting with companies that have the automotive and financial division and account for revenues more than €90 million. Finally an analysis is made regarding profitability indicators comparison which led to the final peer selection of Fiat, Honda, Toyota, Nissan and BMW. After analyzing different variables to conduct the valuation, it was concluded that the enterprise value to sales was the most accurate in order to don't generate disrupted numbers— Table 9.

### Relative Valuation

A relative valuation was performed in order to support the results obtained by the WACC model. The forward multiple EV/Sales was able to achieve a target price of €37.50 representing a downside potential of 20.61%. This multiple also states a SELL recommendation.

The EV/EBITDA, EV/EBIT and Price to Earnings (P/E) multiples were not used to calculate Daimler stock value since inaccuracy of comparable would affect the stock value.

Table 9. Forward Multiple analysis

	Peer Average	Daimler
EV/EBITDA	5,4	9,6
EV/EBIT	10,9	15,0
P/E	9,1%	6,8%
EV/Sales	0,8	1,0

Source: Wall Street Journal and Students analysis

Table 10. EV/SALES - Price Target

Comparable Price Target - EV/SALES	
EV/Sales Peer	0.82
Sales Daimler	167,362
<b>Firm Value Daimler</b>	<b>161,077</b>
Net Debt	-119,569
Minority	1,386
Number of Shares	1,070
<b>Equity Value Daimler</b>	<b>40,122</b>
<b>Price Target</b>	<b>37.50</b>

Source: Wall Street Journal and Students analysis

## 7. Financial Analysis

The predictions for Daimler's financial positions are optimistic, although some challenges are also projected. The company is switching their portfolio to electric vehicles, however, is still behind some competitors in the industry which will create some threats in the near future.

### Debt to Equity ratio

When comparing the company's total debt with their total assets, it's possible to see that Daimler's has a predicted average of 2.9 meaning that creditors own more than investors of every dollar of the company's assets. The justification is in the amount of net debt that is predicted (Figure 25) that is going to increase over the years with constant investment in research in development of new power sources.

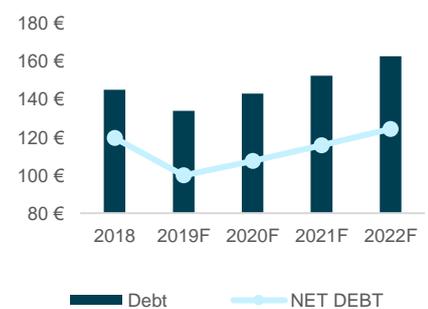
### ROA and ROE

The return on equity measures Daimler's net profit returned in relation to shareholder equity, meaning how profit can it be for its investor's. Daimler currently has a ROE close to 11.5% (Figure 26) predicted to increase in upcoming years meaning that the amount generated for each dollar of common stockholder's equity facing net income will increase.

### Divisions forecast

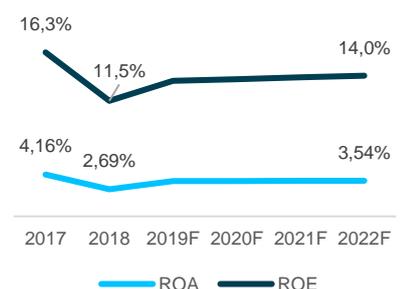
With the increase of electric vehicles, the forecast of sales for Daimler vehicles are going to increase overall. The Mercedes-Benz cars are expecting to reach 3 million-

Figure 25. Debt analysis (in thousands)



Source: Students analysis

Figure 26. Return on assets and equity ratios



Source: Students analysis

unit sales in the year 2022, the same year where Daimler stated that 25% of sales should be all electric vehicles – Figure 27. With the constant increase in revenue forecasted it's possible to assume that the future for this brand is safe, keeping the current strong market share in the world. Daimler Vans are underperforming recently but the expectations are that the situation will reverse, the same with Daimler financial services. Both trucks and buses will continue to keep their momentum with the new generation of autonomous vehicles being produced, which in division is a remarkable change.

Figure 27. Revenue of Mercedes-Benz cars (in millions) and unit sales



Source: Students analysis

### Risks to Price Target

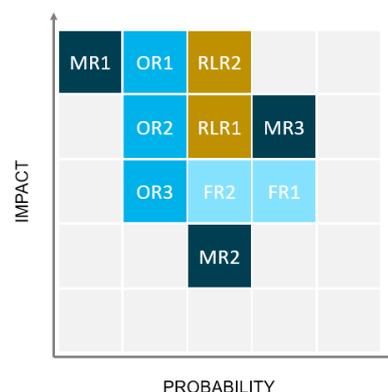
In order to access the investment risks on the Daimler target price, a sensitivity analysis was conducted. The variables used were the weighted average cost of capital (WACC) and the percentage of terminal growth. By analyzing table XX it's possible to understand that both variables are crucial for the price target and a small change can shift the recommendation given.

		Changes in Terminal Growth							
		44.45	0.50%	0.80%	1.10%	1.40%	1.50%	1.60%	1.70%
Changes in WACC	3.7%	36.13	49.60	66.18	87.09	95.32	104.34	114.26	
	3.9%	27.44	39.21	53.51	71.23	78.12	85.61	93.79	
	4.1%	19.73	30.09	42.52	57.72	63.57	69.88	76.72	
	4.3%	12.82	22.01	32.91	<b>44.45</b>	51.09	56.48	62.28	
	4.4%	9.63	18.30	28.55	40.84	45.50	50.50	55.86	
	4.5%	6.61	14.80	24.44	35.94	40.28	44.93	49.90	
	4.6%	3.73	11.48	20.56	31.34	35.40	39.73	44.36	

## 8. Investment Risks

In order to evaluate the risks associated with an investment in Daimler, a risk assessment matrix was conducted. The objective is to identify and study the possible risks of this investment as well as the respective probability of each one to occur (Figure 28)

Figure 28. Risk Matrix



Source: Students analysis

### Market Risk | Macroeconomics (MR1)

The financial market is and always will be a strong threat to the company's operations, especially since Daimler is largely dependent from the European and Asian market, representing a total of 80% of business operations. Considering the Brexit situation and the US-China trade war, the consequences of a market recession can be catastrophic, but even with the current instability of the world market, the likelihood remains with a low probability of occurrence.

### Market Risk | Sector- specific (MR2)

When analyzing the automotive sector, it's important to notice that each region has its own specifications, trends and forecast's. Over the past years it's the Chinese Market that has been registering the biggest economic growth, which is expected to slow down in the upcoming years. The European Economy grew 2.2% in 2018 and the expectations are that this growth will remain stable but is also dependent from the result of the Brexit deal. Although the US growth in 2018 was 2.9%, representing the biggest increase in the past 10 year, the number of sectors that are being incentivized by the government policies to consume the local products instead of foreign are increasing representing a threat to the companies US sales.

**Market Risk | Shift in Demand (MR3)**

There is no doubt that the current trends of mobility are changing the automotive market. The number of passenger car registrations are already decreasing from the previous years, which can represent both a threat and an opportunity for Daimler, since the production of new cars are increasing. The main contributors for this change are the new ways of mobility such as car-sharing, self-driving vehicles and also the increased number of electronic private transportations (Uber, Cabify, Kapten, etc.).

**Operational Risk | R&D (OR1)**

Every loss or negative impact caused by failures in governance or operational business process are considered an operational risk. Safety hazards, aging assets and security threats can negatively impact Daimler's business. The investment by the company in research and development is considerably high but the probability of competitors to be ahead in some existing trends is also high. The outcome of not identifying a trend in an early stage can have a big negative impact in the company future.

**Operational Risk | Information Technology (OR2)**

The traditional IT risks are concerning both equipment failures in the manufacturing process and also the information system included in each vehicle sold. With the continuous improvement of materials quality and regular audit, these risks can be mitigated.

**Operational Risk | Financial situation and dependency of dealerships (OR3)**

Some dealerships and vehicle importers are facing a difficult financial situation which threw supporting actions, would affect the profitability and cash flows of Daimler's automotive divisions. The strong dependency of some dealerships is mitigated by continuing to monitor the financial situation of the dealers and in some situations develop relationships with new business partners.

**Regulatory and Legal Risk | Environmental Protection (RLR1)**

On April 2019 a new regulation was adopted regarding the CO<sub>2</sub> emission for new passenger cars and light commercial vehicles to start after 2020. In order to minimize environmental risks, Daimler is auditing in a regular basis the all the locations of their divisions.

**Regulatory and Legal Risk | Litigation (RLR2)**

There is a constant need to have provisions in order to deal with the increased number of regulations being adopted worldwide regarding importations and exportations. Provisions are also necessary to mitigate legal disputes that can occur when dealing with a number of different entities such as employees, costumers, dealers and suppliers.

**Financial Risk | Foreign Currency and Interest Rate (FR1)**

Being a company that as a worldwide business, it's normal to face a high exposed foreign country exchange risk. Threw the use of hedging plans, the foreign currency risk is mitigated and with interest swap, cross currency swaps and other interest rate contracts the interest rates risks are also mitigated.

**Financial Risk | Liquidity (FR2)**

Daimler ensured that will continue to have the liquidity appropriated for the current situation in the financial markets. In order to ensure that the company remains solvent, Daimler measures the risk of liquidity by considering possible temporary distortions in the financial markets to guarantee that the company remains with credit rating AAA.

## Appendix A: Balance Sheet Statement

### A-1: Projected Balance Sheet Statement

In Million Euros	2017	2018	2019F	2020F	2021F	2022F
<b>NON-CURRENT ASSETS</b>						
Intangible assets	13,735	14,801	13,944	14,875	15,867	16,926
Property plant and equipment	27,981	30,948	31,018	33,088	35,296	37,651
Equipment on operating leases	47,074	49,476	50,120	53,464	57,031	60,836
Equity-method investments	4,818	4,860	4,538	4,841	5,164	5,508
Receivables from financial services	46,600	51,300	49,832	53,157	56,703	60,487
Marketable debt securities	990	722	1,278	1,363	1,454	1,551
Other financial assets	3,204	2,763	4,133	4,409	4,703	5,017
Deferred tax assets	2,844	4,021	4,296	4,583	4,889	5,215
Other assets	1,203	1,115	964	1,028	1,097	1,170
<b>Total non-current assets</b>	<b>148,449</b>	<b>160,006</b>	<b>160,124</b>	<b>170,808</b>	<b>182,204</b>	<b>194,361</b>
<b>CURRENT ASSETS</b>						
Inventories	25,686	29,489	29,204	31,153	33,231	35,448
Trade receivables	11,995	12,586	12,304	13,125	14,000	14,934
Receivables from financial services	39,454	45,440	42,800	45,655	48,701	51,951
Cash and cash equivalents	12,072	15,853	23,903	24,512	25,161	25,854
Marketable debt securities	9,073	8,855	9,259	9,876	10,535	11,238
Other financial assets	3,602	2,970	3,333	3,556	3,793	4,046
Other assets	5,014	5,889	5,512	5,880	6,273	6,691
Assets held for sale	–	531	113	121	129	138
<b>Total current assets</b>	<b>106,896</b>	<b>121,613</b>	<b>126,428</b>	<b>133,877</b>	<b>141,823</b>	<b>150,300</b>
<b>Total assets</b>	<b>255,345</b>	<b>281,619</b>	<b>286,552</b>	<b>304,685</b>	<b>324,027</b>	<b>344,660</b>
<b>EQUITY</b>						
Share capital and capital reserves	14,812	14,780	14,780	14,780	14,780	14,780
Retained earnings	47,553	49,490	57,133	60,945	65,011	69,349
Other reserves	1,504	397	1,391	1,484	1,583	1,689
Equity attributable to shareholders of Daimler AG	63,869	64,667	73,304	77,209	81,374	85,817
Non-controlling interests	1,290	1,386	1,358	1,449	1,546	1,649
<b>Total equity</b>	<b>65,159</b>	<b>66,053</b>	<b>74,662</b>	<b>78,658</b>	<b>82,920</b>	<b>87,466</b>
<b>NON-CURRENT LIABILITIES</b>						
Provisions for pensions and similar obligations	5,767	7,393	10,527	11,229	11,978	12,777
Provisions for income taxes	1,046	628	1,030	1,098	1,172	1,250
Provisions for other risks	7,143	7,734	8,056	8,594	9,167	9,779
Financing liabilities	78,378	88,662	80,514	85,885	91,616	97,728
Other financial liabilities	2,370	2,375	3,211	3,426	3,654	3,898
Deferred tax liabilities	2,347	3,762	2,944	3,141	3,350	3,574
Deferred income	1,668	1,612	4,145	4,422	4,717	5,031
Contract and refund liabilities	3,833	5,438	4,985	5,317	5,672	6,051
Other liabilities	10	10	19	20	21	23
<b>Total non-current liabilities</b>	<b>102,562</b>	<b>117,614</b>	<b>115,430</b>	<b>123,131</b>	<b>131,347</b>	<b>140,110</b>
<b>CURRENT LIABILITIES</b>						
Trade payables	12,451	14,185	13,747	14,665	15,643	16,687
Provisions for income taxes	560	823	866	924	986	1,051
Provisions for other risks	7,620	7,828	9,841	10,498	11,198	11,945
Financing liabilities	48,746	56,240	53,464	57,031	60,836	64,895
Other financial liabilities	6,905	7,657	9,841	10,497	11,198	11,945
Deferred income	1,528	1,580	2,825	3,014	3,215	3,429
Contract and refund liabilities	7,375	7,081	3,115	3,323	3,544	3,781
Other liabilities	2,439	2,346	2,715	2,896	3,090	3,296
Liabilities held for sale	–	212	45	48	51	55
<b>Total current liabilities</b>	<b>87,624</b>	<b>97,952</b>	<b>96,460</b>	<b>102,896</b>	<b>109,761</b>	<b>117,084</b>
<b>Total equity and liabilities</b>	<b>255,345</b>	<b>281,619</b>	<b>286,552</b>	<b>304,685</b>	<b>324,027</b>	<b>344,660</b>

Source: Company data and student estimates

## A-2: Common-Size – Projected Balance Sheet Statement

In Million Euros	2017	2018	2019F	2020F	2021F	2022F
<b>NON-CURRENT ASSETS</b>						
Intangible assets	5.4%	5.3%	4.9%	4.9%	4.9%	4.9%
Property plant and equipment	11.0%	11.0%	10.8%	10.9%	10.9%	10.9%
Equipment on operating leases	18.4%	17.6%	17.5%	17.5%	17.6%	17.7%
Equity-method investments	1.9%	1.7%	1.6%	1.6%	1.6%	1.6%
Receivables from financial services	18.2%	18.2%	17.4%	17.4%	17.5%	17.5%
Marketable debt securities	0.4%	0.3%	0.4%	0.4%	0.4%	0.4%
Other financial assets	1.3%	1.0%	1.4%	1.4%	1.5%	1.5%
Deferred tax assets	1.1%	1.4%	1.5%	1.5%	1.5%	1.5%
Other assets	0.5%	0.4%	0.3%	0.3%	0.3%	0.3%
<b>Total non-current assets</b>	<b>58.1%</b>	<b>56.8%</b>	<b>55.9%</b>	<b>56.1%</b>	<b>56.2%</b>	<b>56.4%</b>
<b>CURRENT ASSETS</b>						
Inventories	10.1%	10.5%	10.2%	10.2%	10.3%	10.3%
Trade receivables	4.7%	4.5%	4.3%	4.3%	4.3%	4.3%
Receivables from financial services	15.5%	16.1%	14.9%	15.0%	15.0%	15.1%
Cash and cash equivalents	4.7%	5.6%	8.3%	8.0%	7.8%	7.5%
Marketable debt securities	3.6%	3.1%	3.2%	3.2%	3.3%	3.3%
Other financial assets	1.4%	1.1%	1.2%	1.2%	1.2%	1.2%
Other assets	2.0%	2.1%	1.9%	1.9%	1.9%	1.9%
Assets held for sale	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%
<b>Total current assets</b>	<b>41.9%</b>	<b>43.2%</b>	<b>44.1%</b>	<b>43.9%</b>	<b>43.8%</b>	<b>43.6%</b>
<b>Total assets</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>
<b>EQUITY</b>						
Share capital and capital reserves	5.8%	5.2%	5.2%	4.9%	4.6%	4.3%
Retained earnings	18.6%	17.6%	19.9%	20.0%	20.1%	20.1%
Other reserves	0.6%	0.1%	0.5%	0.5%	0.5%	0.5%
Equity attributable to shareholders of Daimler AG	25.0%	23.0%	25.6%	25.3%	25.1%	24.9%
Non-controlling interests	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
<b>Total equity</b>	<b>25.5%</b>	<b>23.5%</b>	<b>26.1%</b>	<b>25.8%</b>	<b>25.6%</b>	<b>25.4%</b>
<b>NON-CURRENT LIABILITIES</b>						
Provisions for pensions and similar obligations	2.3%	2.6%	3.7%	3.7%	3.7%	3.7%
Provisions for income taxes	0.4%	0.2%	0.4%	0.4%	0.4%	0.4%
Provisions for other risks	2.8%	2.7%	2.8%	2.8%	2.8%	2.8%
Financing liabilities	30.7%	31.5%	28.1%	28.2%	28.3%	28.4%
Other financial liabilities	0.9%	0.8%	1.1%	1.1%	1.1%	1.1%
Deferred tax liabilities	0.9%	1.3%	1.0%	1.0%	1.0%	1.0%
Deferred income	0.7%	0.6%	1.4%	1.5%	1.5%	1.5%
Contract and refund liabilities	1.5%	1.9%	1.7%	1.7%	1.8%	1.8%
Other liabilities	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Total non-current liabilities</b>	<b>40.2%</b>	<b>41.8%</b>	<b>40.3%</b>	<b>40.4%</b>	<b>40.5%</b>	<b>40.7%</b>
<b>CURRENT LIABILITIES</b>						
Trade payables	4.9%	5.0%	4.8%	4.8%	4.8%	4.8%
Provisions for income taxes	0.2%	0.3%	0.3%	0.3%	0.3%	0.3%
Provisions for other risks	3.0%	2.8%	3.4%	3.4%	3.5%	3.5%
Financing liabilities	19.1%	20.0%	18.7%	18.7%	18.8%	18.8%
Other financial liabilities	2.7%	2.7%	3.4%	3.4%	3.5%	3.5%
Deferred income	0.6%	0.6%	1.0%	1.0%	1.0%	1.0%
Contract and refund liabilities	2.9%	2.5%	1.1%	1.1%	1.1%	1.1%
Other liabilities	1.0%	0.8%	0.9%	1.0%	1.0%	1.0%
Liabilities held for sale	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%
<b>Total current liabilities</b>	<b>34.3%</b>	<b>34.8%</b>	<b>33.7%</b>	<b>33.8%</b>	<b>33.9%</b>	<b>34.0%</b>
<b>Total equity and liabilities</b>	<b>100%</b>	<b>100%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

Source: Company data and student estimates

## Appendix B: Income Statement

### B-1: Projected Income Statement

In Million Euros	2017	2018	2019F	2020F	2021F	2022F
Revenue	164,154	167,362	178,528	190,440	203,146	216,700
Cost of Sales	-129,626	-134,295	-141,255	-150,680	-160,733	-171,457
Gross profit	34,528	33,067	37,273	39,760	42,413	45,243
Operational costs	20,180	21,935	22,665	24,178	25,791	27,512
EBITDA	20,024	17,437	21,124	22,534	24,037	25,641
Depreciation amortization / impairments	-5,676	-6,305	-6,517	-6,951	-7,415	-7,910
EBIT	14,348	11,132	14,608	15,582	16,622	17,731
Selling expenses	-12,951	-13,067	-14,526	-15,495	-16,529	-17,632
General administrative expenses	-3,808	-4,036	-4,204	-4,485	-4,784	-5,103
Research and non-capitalized development costs	-5,938	-6,581	-6,303	-6,724	-7,173	-7,651
Other operating income	2,259	2,330	-2,525	-2,693	-2,873	-3,064
Other operating expense	-1,043	-1,462	-1,293	-1,379	-1,471	-1,569
Profit/loss on equity-method investments net	1,498	656	-940	-1,003	-1,070	-1,141
Other financial income/expense net	-210	210	-183	-195	-208	-222
Amortization of capitalized borrowed cost	-13	-15	-14	-15	-16	-17
Interest income	214	271	-238	-254	-271	-289
Interest expense	-582	-793	-763	-814	-869	-927
Profit before income taxes	13,967	10,595	13,592	14,499	15,466	16,498
Income taxes	-3,350	-3,013	-4,010	-4,278	-4,564	-4,868
<b>Net Profit</b>	<b>10,617</b>	<b>7,582</b>	<b>9,582</b>	<b>10,221</b>	<b>10,903</b>	<b>11,630</b>
thereof attributable to non-controlling interests	339	333	355	378	403	430
thereof attributable to shareholders of Daimler AG	10,278	7,249	9,227	9,843	10,500	11,200

Source: Company data and student estimates

### B-2: Common-Size – Projected Income Statement

In Million Euros	2017	2018	2019F	2020F	2021F	2022F
Revenue	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Cost of Sales	79.0%	80.2%	79.1%	79.1%	79.1%	79.1%
Gross profit	21.0%	19.8%	20.9%	20.9%	20.9%	20.9%
Operational costs	12.3%	13.1%	12.7%	12.7%	12.7%	12.7%
EBITDA	12.2%	10.4%	11.8%	11.8%	11.8%	11.8%
Depreciation amortization / impairments	3.5%	3.8%	3.7%	3.7%	3.7%	3.7%
EBIT	8.7%	6.7%	8.2%	8.2%	8.2%	8.2%
Selling expenses	7.9%	7.8%	8.1%	8.1%	8.1%	8.1%
General administrative expenses	2.3%	2.4%	2.4%	2.4%	2.4%	2.4%
Research and non-capitalized development costs	3.6%	3.9%	3.5%	3.5%	3.5%	3.5%
Other operating income	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%
Other operating expense	0.6%	0.9%	0.7%	0.7%	0.7%	0.7%
Profit/loss on equity-method investments net	0.9%	0.4%	0.5%	0.5%	0.5%	0.5%
Other financial income/expense net	0.1%	-0.1%	0.1%	0.1%	0.1%	0.1%
Amortization of capitalized borrowed cost	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Interest income	0.1%	0.2%	0.1%	0.1%	0.1%	0.1%
Interest expense	0.4%	0.5%	0.4%	0.4%	0.4%	0.4%
Profit before income taxes	8.5%	6.3%	7.9%	7.9%	7.9%	7.9%
Income taxes	24.0%	28.4%	29.5%	29.5%	29.5%	29.5%
<b>Net Profit</b>	<b>10.5%</b>	<b>8.1%</b>	<b>10.1%</b>	<b>10.1%</b>	<b>10.1%</b>	<b>10.1%</b>
thereof attributable to non-controlling interests	3.2%	4.4%	3.7%	3.7%	3.7%	3.7%
thereof attributable to shareholders of Daimler AG	96.8%	95.6%	96.3%	96.3%	96.3%	96.3%

Source: Company data and student estimates

## Appendix C: Cash Flow Statement

In Million Euros	2017	2018	2019F	2020F	2021F	2022F
<b>CF FROM OPERATING ACTIVITIES</b>						
Profit before income taxes	13,967	10,595	13,592	14,499	15,466	16,498
Depreciation and amortization/impairments	5,676	6,305	6,517	6,951	7,415	7,910
Other non-cash expense and income	-1,507	-872	-1,070	-1,142	-1,218	-1,299
Gains (-)/losses (+) on disposals of assets	-453	-178	-474	-506	-539	-575
Change in operating assets and liabilities	–	–	–	–	–	–
Inventories	-1,455	-3,850	-2,843	-3,033	-3,235	-3,451
Trade receivables	-1,597	-884	-951	-1,015	-1,082	-1,155
Trade payables	1,259	1,694	1,102	1,175	1,253	1,337
Receivables from financial services	-11,412	-10,257	-10,675	-11,387	-12,147	-12,958
Vehicles on operating leases	-3,304	-1,609	-3,556	-3,793	-4,047	-4,317
Other operating assets and liabilities	210	877	1,497	1,597	1,704	1,818
Dividends received from equity-method investments	843	1,380	518	553	590	629
Income taxes paid	-3,879	-2,858	-3,203	-3,416	-3,644	-3,887
<b>Cash used for/provided by operating activities</b>	<b>-1,652</b>	<b>343</b>	<b>453</b>	<b>484</b>	<b>516</b>	<b>550</b>
<b>CF FROM INVESTING ACTIVITIES</b>						
Additions to property, plant and equipment	-6,744	-7,534	-6,896	-7,356	-7,847	-8,370
Additions to intangible assets	-3,414	-3,167	-2,987	-3,186	-3,399	-3,625
Proceeds from disposals of property, plant and equipment and intangible assets	812	644	564	601	642	684
Acquisition of Athlon Car Lease International B,V,	–	–	–	–	–	–
Investments in shareholdings	-1,105	-780	-794	-847	-904	-964
Proceeds from disposals of shareholdings	418	363	1,028	1,096	1,169	1,247
Acquisition of marketable debt securities and similar investments	-6,729	-5,739	-6,220	-6,635	-7,077	-7,549
Proceeds from sales of marketable debt securities and similar investments	7,266	6,210	5,719	6,101	6,508	6,942
Other	-22	82	8	9	9	10
<b>Cash used for investing activities</b>	<b>-9,518</b>	<b>-9,921</b>	<b>-9,577</b>	<b>-10,216</b>	<b>-10,898</b>	<b>-11,625</b>
<b>CF FROM FINANCING ACTIVITIES</b>						
Change in short-term financing liabilities	751	2,637	1,508	1,609	1,716	1,831
Additions to long-term financing liabilities	63,116	71,137	63,074	67,282	71,771	76,560
Repayment of long-term financing liabilities	-47,073	-56,318	-49,477	-52,778	-56,299	-60,055
Dividend paid to shareholders of Daimler AG	-3,477	-3,905	-3,633	-3,875	-4,134	-4,409
Dividends paid to non-controlling interests	-250	-315	-274	-292	-311	-332
Proceeds from the issue of share capital	114	118	97	103	110	117
Acquisition of treasury shares	-42	-50	-42	-45	-48	-51
Acquisition of non-controlling interests in subsidiaries	-10	-78	-47	-50	-53	-57
<b>Cash provided by financing activities</b>	<b>13,129</b>	<b>13,226</b>	<b>11,207</b>	<b>11,955</b>	<b>12,753</b>	<b>13,603</b>
Effect of foreign exchange rate changes on cash and cash equivalents	-868	133	-21	-22	-24	-26
Net increase in cash and cash equivalents	1,091	3,781	8,050	609	649	693
Cash and cash equivalents at beginning of period	10,981	12,072	15,853	23,903	24,512	25,161
<b>Cash and cash equivalents at end of period</b>	<b>12,072</b>	<b>15,853</b>	<b>23,903</b>	<b>24,512</b>	<b>25,161</b>	<b>25,854</b>

Source: Company data and student estimates

## Appendix 1: Key Financial Ratios

In Million Euros	Unit	2017	2018	2019F	2020F	2021F	2022F
<b>Liquidity Ratios</b>							
Current Ratio	times	1.22	1.24	1.31	1.30	1.29	1.28
Quick Ratio	times	0.92	0.94	1.01	1.00	0.99	0.98
Cash Ratio	times	0.14	0.16	0.25	0.24	0.23	0.22
<b>Efficiency Ratios</b>							
Total Assets Turnover	times	0.66	0.62	0.63	0.64	0.65	0.65
Inventory Turnover	times	5.05	4.55	4.84	4.84	4.84	4.84
Trade Receivables Turnover	(x)	13.69	13.30	14.51	14.51	14.51	14.51
Accounts Payable Turnover	(x)	10.44	9.74	10.25	10.41	10.41	10.41
Payable Period	times	35.14	39.68	35.45	35.99	35.99	35.99
Days in inventory	days	35.06	38.55	35.52	35.52	35.52	35.52
Operating Cycle	days	99.00	107.6	100.6	100.6	100.6	100.6
Cash Cycle	days	71.90	74.98	75.83	73.10	73.10	73.10
<b>Profitability Ratios</b>							
Gross Profit Margin (%)	%	21.0%	19.8%	20.9%	20.9%	20.9%	20.9%
EBITDA Margin (%)	%	58.0%	52.7%	56.7%	56.7%	56.7%	56.7%
EBIT Margin (%)	%	41.6%	33.7%	39.2%	39.2%	39.2%	39.2%
Net Profit Margin (%)	%	6.5%	4.5%	5.6%	5.6%	5.6%	5.6%
ROA (%)	%	4.16%	2.69%	3.51%	3.52%	3.53%	3.54%
ROE (%)	%	16.3%	11.5%	13.5%	13.6%	13.8%	14.0%
EPS (%)	(x)	9.61	6.79	9.10	9.73	10.40	11.11
<b>Capital Structure</b>							
Total Debt to Total Capital	times	2.23	2.20	1.79	1.82	1.84	1.86
Total Debt to Total Assets	times	0.50	0.51	0.47	0.47	0.47	0.47
Debt to Equity Ratio	times	2.92	3.26	2.84	2.87	2.91	2.94
Equity Multiplier	times	3.92	4.26	3.84	3.87	3.91	3.94
Debt to EBITDA	times	6.36	8.32	6.34	6.34	6.34	6.34
Interest Coverage Ratio	times	24.65	14.04	19.14	19.14	19.14	19.14
D/E	times	1.95	2.20	1.79	1.82	1.84	1.86
E/D	times	0.51	0.46	0.56	0.55	0.54	0.54

Source: Company data and student estimates

## Appendix 2: Forecasting Assumptions

### C-1: Balance Sheet Assumptions

In Million Euros	2017	2018	2019F	2020F	2021F	2022F	Assumption
<b>NON-CURRENT ASSETS</b>							
Intangible assets	5.4%	5.3%	4.9%	4.9%	4.9%	4.9%	Contains all vehicles and module projects capitalized development costs. Intangible assets were assumed to grow aligned with sales, with proportion of a 4-year historical data
Property plant and equipment	11.0%	11.0%	10.8%	10.9%	10.9%	10.9%	Contains assets crucial for Daimler operations which are not easily converted in cash such as land, equipment, buildings and leased vehicles. Intangible assets were assumed to grow aligned with sales, with proportion of a 4-year historical data
Equipment on operating leases	18.4%	17.6%	17.5%	17.5%	17.6%	17.7%	Comprises all operating leased assets and it was assumed to grow in line with sales, with proportion of a 4-year historical data
Equity-method investments	1.9%	1.7%	1.6%	1.6%	1.6%	1.6%	Covers the carrying amounts of equity interests in Beijing Benz Automotive Co., Ltd., BAIC Motor Corporation Ltd. and There Holding B.V. It was estimated to equal to the average of the past 4 years aligned with sales.
Receivables from financial services	18.2%	18.2%	17.4%	17.4%	17.5%	17.5%	Contains the receivables from Daimler operations and it was estimated to equal to the average of the past 4 years aligned with sales.
Marketable debt securities	0.4%	0.3%	0.4%	0.4%	0.4%	0.4%	Represent debt instruments that are allocated to liquidity, most of which are traded in active markets assets and it was assumed to grow in line with sales, with proportion of a 4-year historical data
Other financial assets	1.3%	1.0%	1.4%	1.4%	1.5%	1.5%	Consist of derivative financial instruments, equity and debt instruments equal to an historical 4-years proportion to sales
Deferred tax assets	1.1%	1.4%	1.5%	1.5%	1.5%	1.5%	Comprises deferred tax assets and tax refund claims and it was assumed to grow in line with sales, with proportion of a 4-year historical data
Other assets	0.5%	0.4%	0.3%	0.3%	0.3%	0.3%	
<b>CURRENT ASSETS</b>							
Inventories	10.1%	10.5%	10.2%	10.2%	10.3%	10.3%	Relates to finished goods and work in progress. Considering that the number of new models is increasing with the change to an electric portfolio, is expected a constant similar to the past 4-years and in line with sales.
Trade receivables	4.7%	4.5%	4.3%	4.3%	4.3%	4.3%	Contains the receivables from Daimler operations and it was estimated to equal to the average of the past 4 years aligned with sales.
Receivables from financial services	15.5%	16.1%	14.9%	15.0%	15.0%	15.1%	
Marketable debt securities	3.6%	3.1%	3.2%	3.2%	3.3%	3.3%	Represent debt instruments that are allocated to liquidity, most of which are traded in active markets assets and it was assumed to grow in line with sales, with proportion of a 4-year historical data
Other financial assets	1.4%	1.1%	1.2%	1.2%	1.2%	1.2%	Consist of derivative financial instruments, equity and debt instruments equal to an historical 4-years proportion to sales
Other assets	2.0%	2.1%	1.9%	1.9%	1.9%	1.9%	Comprises tax refund claims and it was assumed to grow in line with sales, with proportion of a 4-year historical data
Assets held for sale	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	Result from an agreement signed between the Daimler Group and the BMW Group in March 2018 to merge their business units for mobility services. It is predicted not to have activity in the future 4 years

In Million Euros	2017	2018	2019F	2020F	2021F	2022F	Assumption
<b>EQUITY</b>							
Share capital and capital reserves	5.8%	5.2%	5.2%	4.9%	4.6%	4.3%	Contains the funds raised by Daimler in exchange for shares. No action to raise more equity is expected for the future 4 years.
Retained earnings	18.6%	17.6%	19.9%	20.0%	20.1%	20.1%	Contains the amount of net income left over for the business after the payments of dividends to its shareholders. Retained earnings were assumed to grow aligned with sales, with proportion of a 4-year historical data
Other reserves	0.6%	0.1%	0.5%	0.5%	0.5%	0.5%	
Non-controlling interests	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	Were assumed to grow aligned with sales, with proportion of a 4-year historical data
<b>NON-CURRENT LIABILITIES</b>							
Provisions for pensions and similar obligations	2.3%	2.6%	3.7%	3.7%	3.7%	3.7%	Contains benefits and compensations to former employees and it was assumed to grow in line with sales, with proportion of a 4-year historical data
Provisions for income taxes	0.4%	0.2%	0.4%	0.4%	0.4%	0.4%	Converts future taxes and it was assumed to grow in line with sales, with proportion of a 4-year historical data
Provisions for other risks	2.8%	2.7%	2.8%	2.8%	2.8%	2.8%	Equal to the average of the past 4-years aligned with sales
Financing liabilities	30.7%	31.5%	28.1%	28.2%	28.3%	28.4%	Contains long-term borrowings, short-term financing and bonds. Since its related to revenue, the financing liabilities were assumed to grow in line with sales, with proportion of a 4-year historical data
Other financial liabilities	0.9%	0.8%	1.1%	1.1%	1.1%	1.1%	Contains the need to refinancing and advanced payments. It was assumed to grow aligned with sales, with proportion of a 4-year historical data
Deferred tax liabilities	0.9%	1.3%	1.0%	1.0%	1.0%	1.0%	Equal to the average of the past 4-years aligned with sales
Deferred income	0.7%	0.6%	1.4%	1.5%	1.5%	1.5%	Equal to the average of the past 4-years aligned with sales
Contract and refund liabilities	1.5%	1.9%	1.7%	1.7%	1.8%	1.8%	Contains deferred revenue from service and maintenance contracts and extended warranties as well as obligations from sales transactions and it was assumed to grow aligned with sales, with proportion of a 4-year historical data
Other liabilities	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	Contains deferred income, tax liabilities and deferred taxes and it's equal to the average of the past 4-years
<b>CURRENT LIABILITIES</b>							
Trade payables	4.9%	5.0%	4.8%	4.8%	4.8%	4.8%	Equal to the average of the past 4-years aligned with sales
Provisions for income taxes	0.2%	0.3%	0.3%	0.3%	0.3%	0.3%	Contains provisions for pensions and similar obligations as well as liabilities from income taxes and it was assumed to grow in line with sales, with proportion of a 4-year historical data
Provisions for other risks	3.0%	2.8%	3.4%	3.4%	3.5%	3.5%	
Financing liabilities	19.1%	20.0%	18.7%	18.7%	18.8%	18.8%	Contains long-term borrowings, short-term financing and bonds. Since its related to revenue, the financing liabilities were assumed to grow in line with sales, with proportion of a 4-year historical data
Other financial liabilities	2.7%	2.7%	3.4%	3.4%	3.5%	3.5%	Equal to the average of the past 4-years aligned with sales
Deferred income	0.6%	0.6%	1.0%	1.0%	1.0%	1.0%	Equal to the average of the past 4-years aligned with sales

In Million Euros	2017	2018	2019F	2020F	2021F	2022F	Assumption
Contract and refund liabilities	2.9%	2.5%	1.1%	1.1%	1.1%	1.1%	Contains deferred revenue from service and maintenance contracts and extended warranties as well as obligations from sales transactions and it was assumed to grow aligned with sales, with proportion of a 4-year historical data
Other liabilities	1.0%	0.8%	0.9%	1.0%	1.0%	1.0%	Contains deferred income, tax liabilities and deferred taxes and it's equal to the average of the past 4-years
Liabilities held for sale	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	Result from an agreement signed between the Daimler Group and the BMW Group in March 2018 to merge their business units for mobility services. It is predicted not to have activity in the future 4 years

Source: Company data and student estimates

## C-2: Income Statement

In Million Euros	2017	2018	2019F	2020F	2021F	2022F	Assumption
<b>MACROECONOMIC</b>							
Inflation Rate	1.7%	1.9%	1.6%	1.7%	1.8%	2.0%	Based on IMF World Economic Outlook, June 2019 - European Union
GDP Asia and Pacific	5.8%	5.3%	5.1%	5.2%	5.3%	5.2%	Based on IMF World Economic Outlook, June 2019 – Asia and Pacific
GDP Europe	2.5%	2.2%	1.6%	1.8%	1.7%	1.7%	Based on IMF World Economic Outlook, June 2019 - European Union
GDP North America	2.2%	2.7%	2.2%	1.9%	1.8%	1.7%	Based on IMF World Economic Outlook, June 2019 – North America
GDP South America	0.6%	0.4%	1.1%	2.4%	2.6%	2.7%	Based on IMF World Economic Outlook, June 2019 – South America
<b>INCOME STATEMENT</b>							
Revenue	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	Revenues coming from passenger combustion vehicles will decrease reaching negative values. On the other hand the revenue coming from passenger BEV and PHEV vehicles will increase considerably. Overall it is assumed that Daimler will continue to have a strong presence in the segment off premium cars, continuing its percentual average off increase as in the past 4 years.
Cost of sales	79.0%	80.2%	79.1%	79.1%	79.1%	79.1%	Contains costs related with manufacturing, research and development and services contracts. It was computed based on the percentual average of the past 4 years aligned with sales
Selling expenses	7.9%	7.8%	8.1%	8.1%	8.1%	8.1%	Contains sales personnel costs, marketing and other routine expenses. Considering that its predicted that Daimler will expand in size and personnel, the costs are estimated to be the same as in the past 4 years aligned with sales
General administrative expenses	2.3%	2.4%	2.4%	2.4%	2.4%	2.4%	
Research and non-capitalized development costs	3.6%	3.9%	3.5%	3.5%	3.5%	3.5%	Considering the constant need to innovate, its assumed that Daimler will invest 3,5% of total sales on R&D. This assumption is supported by the fact that the current CEO is the former leader of the R&D team.
Other operating income	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	This contains Rental income, gains and losses of PP&E and Other miscellaneous expense and income. It was assumed to grow aligned with sales, with proportion of a 4-year historical data
Other operating expense	0.6%	0.9%	0.7%	0.7%	0.7%	0.7%	

In Million Euros	2017	2018	2019F	2020F	2021F	2022F	Assumption
Profit/loss on equity-method investments net	0.9%	0.4%	0.5%	0.5%	0.5%	0.5%	Equal to the average of the past 4-years aligned with sales
Other financial income/expense net	0.1%	-0.1%	0.1%	0.1%	0.1%	0.1%	Contains income and expense from compounding and effects from changes in discount rates of provisions for other risks. It was assumed to grow aligned with sales, with proportion of a 4-year historical data
Amortization of capitalized borrowed cost	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	Equal to the average of the past 4-years aligned with sales
Interest income	0.1%	0.2%	0.1%	0.1%	0.1%	0.1%	Contains the net interest income on the net assets of defined benefit pension plans. It was assumed to grow aligned with sales, with proportion of a 4-year historical data
Interest expense	0.4%	0.5%	0.4%	0.4%	0.4%	0.4%	Contains the net interest expense on the net obligation from defined benefit pension plans. It was assumed to grow aligned with sales, with proportion of a 4-year historical data
Income taxes	24.0%	28.4%	29.5%	29.5%	29.5%	29.5%	Daimler uses an income tax rate of 29.83%. Includes a federal corporate income tax rate of 15%, a solidarity tax surcharge of 5.5% and a trade tax rate of 14%. According to this, the assumed income tax rate is the average of the past 4 years
thereof attributable to non-controlling interests	3.2%	4.4%	3.7%	3.7%	3.7%	3.7%	Equal to the average of the past 4-years aligned with sales
thereof attributable to shareholders of Daimler AG	96.8%	95.6%	96.3%	96.3%	96.3%	96.3%	Equal to the average of the past 4-years aligned with sales

Source: Company data and student estimates

## Appendix 3: Business and Corporate Structure

### Appendix 9.1 – Old corporate structure

	Mercedes-Benz Cars	Daimler Trucks	Mercedes-Benz Vans	Daimler Buses	Daimler Financial Services
<b>Revenue</b>	€93.1 billion	€38.3 billion	€13.6 billion	€4.5 billion	€26.3 billion
<b>Employees</b>	145,436	82,953	26,210	18,770	14,070
<b>Brands</b>	  MAYBACH  Mercedes me 	     	 	  	Mercedes-Benz Bank Mercedes-Benz Financial Services    

Source: Company data

### Appendix 9.2 - New corporate structure



## Appendix 9: Porter's Five Forces

Strengths	Weaknesses
<ul style="list-style-type: none"> <li>Strong Reputation of Mercedes-Benz and Smart</li> <li>High Investment in Research and Development</li> <li>High investment in electric and hydrogen vehicles</li> <li>Diversified geographical presence</li> </ul>	<ul style="list-style-type: none"> <li>Few current diversifications in hybrid and electric vehicles</li> <li>Poor performance of trucks and buses divisions</li> <li>High prices comparing with other competitors</li> </ul>
Opportunities	Threats
<ul style="list-style-type: none"> <li>Autonomous driving</li> <li>Technological advance</li> <li>Increase in demand of hybrid and electric vehicles</li> <li>International expansions and strategic acquisitions</li> </ul>	<ul style="list-style-type: none"> <li>Uncertainty regarding the future of the automotive sector</li> <li>Increasing fuel prices</li> <li>Strong competition among competitor brands</li> </ul>

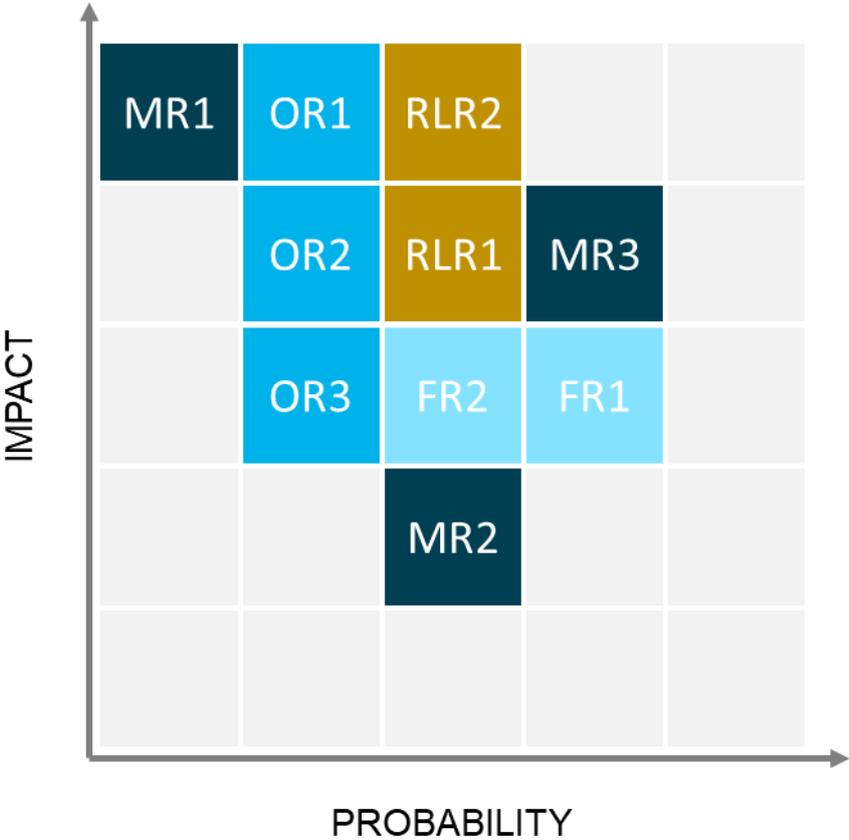
## Appendix 10: DCF Analysis

In Million Euros	2019F	2020F	2021F	2022F	Assumption
<b>Valuation</b>					
Risk Free Rate (RRF)	0.24%	0.24%	0.24%	0.24%	AAA Eurozone Government 10Y Bonds
Country Risk Premium	0.0%	0.0%	0.0%	0.0%	Considering that daimler is based in Germany, being a mature market and having a credit ranking of AAA, the country risk premium is 0%. Assumption supported by Aswath Damodaran's calculations as in January 1, 2019
Market Risk Premium	5.96%	5.96%	5.96%	5.96%	Aswath Damodaran's calculations as in January 1, 2019
Cost of Debt (Rd)	4.18%	4.18%	4.18%	4.18%	Aswath Damodaran's calculations as in January 2019 in Europe for the Auto and trucks and auto part industry
Beta Levered	0.90	0.90	0.90	0.90	Student analysis calculations with the use of net debt to equity, tax rate and unlevered beta
Terminal Growth Rate	0.80%	1.40%	1.50%	1.40%	Based on the forecasted Real GDP growth rate for Germany in 2022F. Source: IMF World Economic Outlook 2019
Marginal Tax Rate	28.5%	28.5%	28.5%	28.5%	Student's calculations using the past 4 years as reference
Equity Weight	31%	31%	31%	31%	Using the total equity to total debt for the forecasted years
Equity Weight	69%	69%	69%	69%	Using the total debt to total equity for the forecasted years
WACC	4.33%	4.33%	4.33%	4.33%	Students analysis

### Appendix 11: Sensitivity Analysis

		Changes in Terminal Growth							
		44.45	0.50%	0.80%	1.10%	1.40%	1.50%	1.60%	1.70%
Changes in WACC	3.7%	36.13	49.60	66.18	87.09	95.32	104.34	114.26	
	3.9%	27.44	39.21	53.51	71.23	78.12	85.61	93.79	
	4.1%	19.73	30.09	42.52	57.72	63.57	69.88	76.72	
	4.3%	12.82	22.01	32.91	<b>44.45</b>	51.09	56.48	62.28	
	4.4%	9.63	18.30	28.55	40.84	45.50	50.50	55.86	
	4.5%	6.61	14.80	24.44	35.94	40.28	44.93	49.90	
	4.6%	3.73	11.48	20.56	31.34	35.40	39.73	44.36	

### Appendix 12: Risk Matrix



## References

Bloomberg Markets (2019). Daimler AG [Online]. Available from:  
<https://www.bloomberg.com/quote/DAI:GR>

The right role for multiples in valuation. Goedhart, M. Koller, T. and Wessels, D. Available from:  
<https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/the-right-role-for-multiples-in-valuation#>

Ruback, R. and Baker, M. (1999) Estimating industry Multiples. Available from:  
<http://www.people.hbs.edu/mbaker/cv/papers/EstimatingIndustry.pdf>

Daimler business units and mobility (2019). Available from:  
<https://www.daimler.com/company/business-units/daimler-mobility/>

Economic performance by country (2019). Available from:  
[https://ec.europa.eu/info/business-economy-euro/economic-performance-and-forecasts/economic-performance-country\\_pt](https://ec.europa.eu/info/business-economy-euro/economic-performance-and-forecasts/economic-performance-country_pt)

Automotive Trends 2019. Available from:  
<https://www.forbes.com/sites/sarwantsingh/2019/02/11/top-automotive-trends-in-2019-a-year-of-wows-and-woes/#2baef3d61be8>

Damodaran, A. (2019). Country Risk Premium. Available from:  
[http://pages.stern.nyu.edu/~adamodar/New\\_Home\\_Page/datafile/ctryprem.html](http://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/ctryprem.html)

Damodaran, A. (2019). Beta. Available from:  
[http://pages.stern.nyu.edu/~adamodar/New\\_Home\\_Page/datafile/Betas.html](http://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/Betas.html)

Damodaran, A. (2019). Cost of capital. Available from:  
[http://people.stern.nyu.edu/adamodar/New\\_Home\\_Page/datafile/wacc.htm](http://people.stern.nyu.edu/adamodar/New_Home_Page/datafile/wacc.htm)

Daimler annual reports. Available from:  
<https://www.daimler.com/investors/reports-news/annual-reports/>

Real GDP growth forecast (2019). Available from:  
[https://www.imf.org/external/datamapper/NGDP\\_RPCH@WEO/OEMDC/ADVEC/WEOWORLD](https://www.imf.org/external/datamapper/NGDP_RPCH@WEO/OEMDC/ADVEC/WEOWORLD)

An automotive industry transformed, Deloitte (2019). Available from:  
[https://www2.deloitte.com/content/dam/Deloitte/pt/Documents/manufacturing/pt\(en\)\\_dc\\_accelaratingtoward2020\\_05112009.pdf](https://www2.deloitte.com/content/dam/Deloitte/pt/Documents/manufacturing/pt(en)_dc_accelaratingtoward2020_05112009.pdf)

# Abbreviations

Cash Flow (CF)

Capital Expenditure (CAPEX)

Capital Asset Pricing Model (CAPM)

Compliance Management System (CMS)

Discounted Cash Flow (DCF)

Depreciation & Amortization (D&A)

Earnings Before Interest & Taxes (EBIT)

Earnings Before Interest, Taxes, Depreciation & Amortization (EBITDA)

Earnings per share (EPS)

Enterprise Value (EV)

Forecast (F)

Gross Domestic Product (GDP)

Growth rate (G)

International Monetary Fund (IMF)

Net Profit (NP)

Property, plant and equipment (PP&E)

Return on Assets (ROA)

Return on Equity (ROE)

Revenue (Rev)

Selling, General and Administrative Expenses (SG&A)

United States (US)

US Dollar (USD)

Weighted average cost of capital (WACC)

Working Capital (WC)

Yield to Maturity (YTM)

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## Recommendation System

Level of Risk	SELL	REDUCE	HOLD/NEUTRAL	BUY	STRONG BUY
High Risk	0%≤	>0% & ≤10%	>10% & ≤20%	>20% & ≤45%	>45%
Medium Risk	-5%≤	>-5% & ≤5%	>5% & ≤15%	>15% & ≤30%	>30%
Low Risk	-10%≤	>-10% & ≤0%	>0% & ≤10%	>10% & ≤20%	>20%