MASTER OF SCIENCE IN
FINANCE

MASTERS FINAL WORK
PROJECT

EQUITY RESEARCH:
ASTON MARTIN LAGONDA

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Abstract

Aston Martin Lagonda Global Holdings Plc is an English company operating in the high luxury segment of the automotive industry. The brand is known worldwide as one of the most iconic luxury brands. Its cars are featured in several films of the 007 sagas and are seen by the public as products that display exclusivity, elegance, innovation, and style, coupled with performance and engineering.

This project aims to evaluate the shares of Aston Martin Lagonda Global Holdings Plc and consequently calculate the value of the company, considering the structure and recommendations of the CFA Institute. The choice fell on this entity due to the preference for its products and the challenge of considering whether the purchase of its shares is a good investment, as they have been devalued since the IPO in October 2018. This report is based on public information and was prepared on July 3rd, 2020, any information made available after that date will not be considered in the valuation.

According to the Free Cash Flow to the Firm valuation method, the target price for 2020 is £0.84, i.e., a potential increase of 31.75% based on the share value on March 31st, 2020. To support the valuation, the Adjusted Present Value (APV) and the Residual Income (RI) were computed giving a positive recommendation of strong buy and buy respectively. Considering this information, I present a buy recommendation, however, any investor must be aware of its investor´s profile and relationship with risk. Along with this recommendation, I highlight that the company presents a high level of risk, mainly due to its recent history, the uncertainty of the ability to implement the developed plans, and the uncertainty in the market due to Brexit and Covid-19.

JEL Classification: G10; G32; G34

Keywords: Equity Research; Valuation; Mergers & Acquisitions; Aston Martin Lagonda; Luxury Cars; Luxury Segment; Target Price; High Risk; Car Industry; High Luxury Cars; High Risk

Resumo

A *Aston Martin Lagonda Global Holdings Plc* é uma empresa inglesa que opera no segmento de alto luxo da indústria automóvel. A marca é conhecida mundialmente como uma das marcas de luxo mais icónicas. Os seus carros estão presentes em vários filmes da saga 007, e são vistos pelo público como sendo produtos que exibem exclusividade, elegância, inovação e estilo, aliados ao desempenho e engenharia.

Este projeto tem como objetivo a avaliação das ações da *Aston Martin Lagonda Global Holdings Plc* e consequentemente o cálculo do valor da empresa, tendo em consideração a estrutura e recomendações do *CFA Institute*. A escolha recaiu sobre esta entidade devido ao gosto pelos seus produtos e ao desafio de perspetivar se a compra das suas ações é um bom investimento, visto que, as mesmas têm se desvalorizado desde o IPO em Outubro de 2018. Este relatório tem por base informação pública e foi elaborado a 3 de julho de 2020, qualquer informação disponibilizada após essa data não estará considerada na avaliação.

De acordo com o método de avaliação *Free Cash Flow to the Firm*, o preço-alvo para 2020 é de £0.84, ou seja, um potencial de subida de 31.75%, tendo como base o valor da ação a 31 de março de 2020. De forma a suportar a avaliação, o *Adjusted Present Value* (APV) e o *Residual Income* (RI) foram calculados, orientando uma recomendação positiva de *strong buy* e *buy* respetivamente. Considerando estes dados, apresento uma recomendação de compra, no entanto, qualquer investidor tem de estar ciente do seu perfil de investidor e relação com o risco. Juntamente com esta recomendação, saliento que a empresa apresenta um alto nível de risco, maioritariamente devido ao seu histórico recente, à incerteza da capacidade de implementar os planos desenvolvidos e à incerteza no mercado devido ao Brexit e à Covid-19.

Classificação JEL: G10; G32; G34

Palavras-Chave: *Equity Research*; Avaliação de Empresas; Fusões e Aquisições; Aston Martin Lagonda; Indústria automóvel; Carros de Luxo; Segmento de alto luxo; Preço-Alvo; Alto Risco

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Following, I want to thank my family for giving me the possibility to do this master's degree and for all their support and encouragement during these 5 years of university. Additionally, I want to thank my girlfriend Alice Mendes for all her support and interest in my thesis and these years of university that we shared.

Finally, I want to thank my friends and colleagues for all their friendship and unique moments that we spent at this university.

Without them, this life goal would not have been possible to accomplish. This thesis represents the end of my university life, but we must never forget that learning is a lifetime journey filled with new discoveries and opportunities.

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LISBON SCHOOL OF ECONOMICS & MANAGEMENT
UNIVERSIDADE DE LISBOA

Aston Martin Lagonda Global Holdings Plc

Buy

High risk

03 July 2020

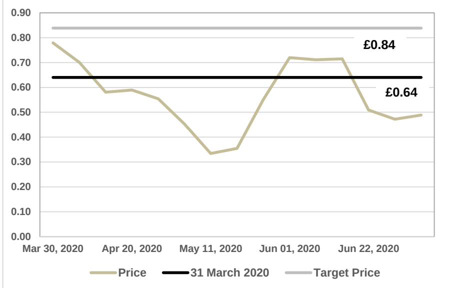
Portugal

Aston Martin Lagonda

1. Research Snapshot

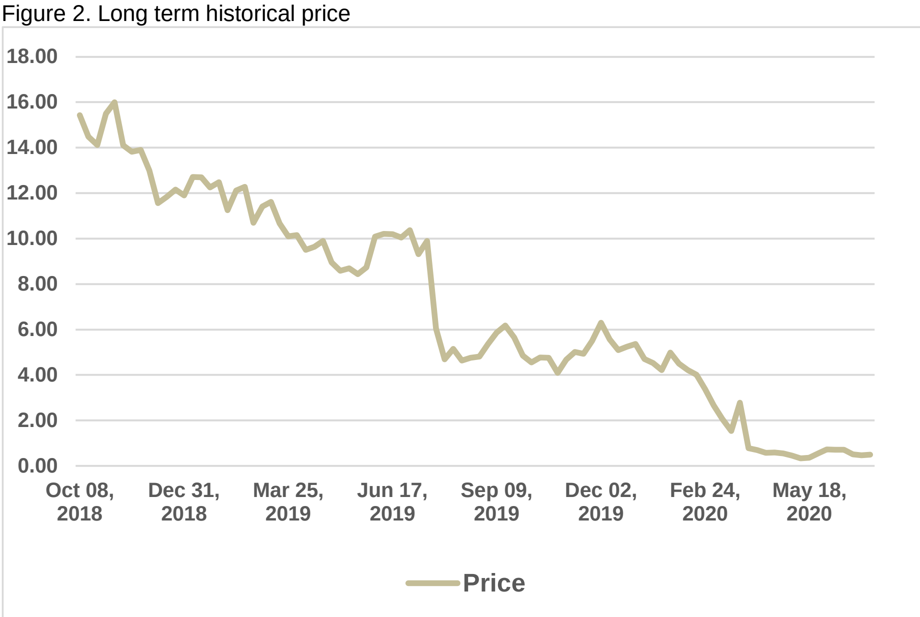
Considered the analyses conducted on Aston Martin Lagonda Global Holdings Plc (AML), I issue a **BUY** recommendation, with a target price of £0.84/sh for 2020YE, using the Discounted Cash Flow Model, implying an upside potential of 31.75% from the March 31st, 2020 closing price of £0.64/sh, with high-risk. Aston Martin Lagonda is the only independent luxury car company in the world that has more than 100 years of experience in two brands (Aston Martin and Lagonda). The company designs, produce, and sells luxury cars in the four corners of the world. AML has been facing earnings and liquidity issues in the past recent years. In the last five years, only in one year, the company released a positive profit. In 2020, the company is trying to make a change in this paradigm.

Figure 1. Short term historical price



Source: *Yahoo Finance, adapted.*

Figure 2. Long term historical price



Source: *Yahoo Finance, adapted.*

New leadership and corporate strategies

A capital increase was performed in 2020 and bought by Consortium led by Laurence Stroll, who is the new AML Chairman. Additionally, the company prepared a reset plan to face the current problems, and position itself within the luxury status, relate the supply with the demand, and increase the margins. On August 1st, 2020, Tobias Moers (former CEO of Mercedes-Benz for 25 years) will be the new AML CEO.

A reputational player in the high luxury automotive segment

AML is a global brand, and its cars are known by everyone, with passages in films as the 007 sagas and distinction with several awards. Currently, the company only has a few cars in its portfolio, however, they have plans to expand it and gain market share from its peers. In 2021, the company will step into the highlights, beginning to race in Formula 1.

High-risk Company

Considering the analyses conducted in this document, it is possible to conclude that the company has a strong plan to solve the current problems and redirect itself to a good and profitable path. However, in case of some targets are not met, the company must adjust the others, if not, the earnings and consequently the share price could have a big fall.

2. Business Description

Company Profile

Aston Martin Lagonda (AML), is an independent British luxury sports car and grand tourer manufacturer, based in Gaydon, England. The company name is derived from two major brands: Aston Martin and Lagonda. The first one was founded in 1913, named with one of its founder's name, Lionel Martin, and a reference to the victory in the Aston Clinton Hill Climb Race first edition. During its history, it changed owners several times and faced several financial problems. The brand, in its beginning, focused more on developing racing cars, however, there were some periods where it also produced road cars. Both were linked to the sports car segment. In 1947, Aston was acquired by David Brown, during which time the models obtained the initials DB and began to be more luxurious in both appearance and features. In the same year, David Brown acquired Lagonda. The second one, founded by Wilbur Gunn in 1904, was named after a river in its founder´s hometown. The brand exhibited the highest standards of luxury cars and manufactured its first sports car in 1925. Lagonda would become the first zero-emission luxury car brand.

Aston Martin quickly gained a worldwide reputation with the DB5 model in the 1964 James Bond film "Goldfinger". Aston Martin Lagonda is the only independent luxury company in the world that has more than 100 years of experience in two brands. The company has currently a portfolio of four cars: Vantage, DB11, DBS Superleggera, and Rapide AMR, which will be extended to 8 with the entry of DBX (which won the "best luxury SUV" at GQ car awards), Aston Martin Vantage Roadster, and the special editions Goldfinger DB5 Continuations and DBS GT Zagatos. The deliveries of these five new cars are expected to happen in 2020´s second quarter or second semester depending on the car. The company received several awards for its models, such as the 2016´s T3 Design Award by DB11 and the nomination for the luxury brand of the year in 2018. AML is proud to be one of the most iconic luxury brands in the world, which pays attention to the design, performance, engineering, and manufacturing of its products, being seen by consumers as a brand that exhibits exclusivity, elegance, innovation, and style. The company is listed on the London Stock Exchange since October 2018.

Table 1. AML´s Brief Profile

AML´s Brief Profile	
Trade on	London Stock
Headquarters	Gaydon
Products	High Luxury
Services	Servicing of vehicles
Nº employees	2450 (2019)
Financing reporting	IFRS Accounting

Source: *Student Analysis.*

Table 2. Market´s Profile

Market Profile	
Closing Price (03 Jully)	£0.47
52 weeks price range	£0.27 - £10.59
Shares Outstanding	1 824M
Volume	14,168,377
Market Capitalization	£1 063.4M
Free Float	1 582M

Source: *Bloomberg, adapted.*

Table 3. AML´s trading data

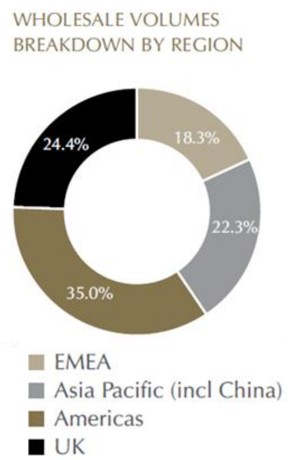
Year	Average Closing Price	Average daily volume traded
2018	£14.26	760 420.18
2019	£8.17	636 614.90
2020	£2.17	16 561 664.34

Source: *Yahoo Finance, adapted.*

Company segments and regions

AML has sales points all around the globe, divided into four regions: Asia Pacific, EMEA, UK, and the Americas. Considering AML 2019´s data, the Americas is the location with more wholesale volumes (35%) and the only one with a sales' increase from the previous year (16%). The UK, AML homeland, is the second higher wholesale region, which obtained 24.4% of the total sales with a decrease of 21% from the previous year. These two regions of the Globe have been disputing the first position in recent years. The third region was the Asia Pacific, with 22.3%, a decrease of 16% from the prior year. The last region obtained the higher wholesale decrease, 28%, reaching 18.3% of total wholesale. During 2019, AML increased the number of dealers and launched its Centre for excellence, located in Gaydon, an academy that provides training to the dealers in order for them to be able to provide a luxury experience to costumers.

Figure 3. Sales per Region



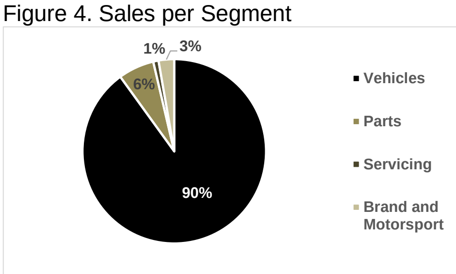
Source: *AML Annual Report 2019.*

The AML focuses all of its production in the UK, dividing it into three locations: Gaydon AML headquarters and main manufacturing facility, built in 2003, where the majority of the cars are produced; St Athan, AML Production & Technology Centre, which opened in October 2019. It will be manufacturing the new model DBX and will be the home for future electric vehicles; and, the last location, Newpoert Pagnell, which was the Aston Martin's heart for more than 50 years. The historic building has a key part in the brand expansion, producing the continuation cars. The total production in 2019 was 6 176 units, a slight decrease of 4%. The company production is focused on prioritizing demand over supply.

The company revenues are divided in four segments. Sale of vehicles, sale of parts, servicing of vehicles and brand, and motorsport. The brand sold 5 870 vehicles in

2019, a decrease of 9% compared to 2018, in terms of volume there was a decrease of 11% to £897.6M. The sale of parts grew 3% to £63M, which could be explained by the increase in vehicles' sales in the past recent years. On the opposite side, due to a greater focus on production instead of restorations, the servicing of vehicles decreased by 36% to £9.3M. Lastly, the segment that grew the most in that year, the brand and motorsport, grew 171% to £27.4M, which could be explained by the sale of 61 race cars.

Figure 4. Sales per Segment



***Source:** AML Annual Report 2019, adapted.*

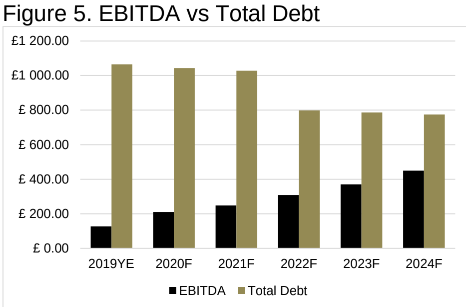
The company segments its cars into two groups: core and special. In the latter, special editions and heritage cars are inserted. These are produced in a reduced quantity and have high margins. Within the core cars, the brand currently presents sports cars, grand tourer, super grand tourer, and SUV. In the future, AML intends to add to its core portfolio the mid-engine cars.

Key drivers of profitability

The key drivers of profitability are divided between the revenues and the costs.

The HNWI populations drive the demand for luxury cars, their increase will lead to a positive impact on the said demand. This population is spread around the world, to reach it, the company needs strong financial distribution channels. Additionally, a strong brand is needed to increase and maintain high margins. The presence in Formula 1 increases the strength of the brand and is a powerful element to increase the number of units sold and margins.

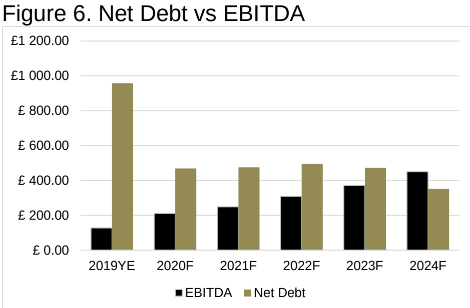
Figure 5. EBITDA vs Total Debt



***Source:** Student Analysis.*

The supply is impacted by the demand, AML will not produce more than the demand, or may even produce less, with the aim of conquering higher margins. The costs of producing a vehicle, comes from its constituents, and their price variation may impact the final price of the vehicles; the investment in R&D in this is type of segment becomes really expensive, because it needs to bring the best features and design to the costumers; the production chains, and staff. The efficiency is also an element that impacts profitability. The more efficient the company is, the lower its costs will be, and consequently, the higher the margins it may reach. However, despite the very high costs of producing a car, companies with a strong brand may easily pass this cost on to the customer, thus maintaining and increasing their margins. There is a factor that may impact positively or negatively the profitability of the company: the exchange rate fluctuations. This affects both sales and costs. However, strong usage of hedging helps to minimize potential unfavorable results.

Figure 6. Net Debt vs EBITDA



***Source:** Student Analysis.*

Strategy

In this chapter, I will talk about the strategy/plan of the company. In the first part, I will address the strategy that was in place until 2019. After that, I will explain the new strategy that started in 2020. The information was gathered from AML sources.

With the vision "to be the great British car company that creates the most beautiful and accomplished automotive art in the world", AML, developed a strategy denominated "second-century plan". In the first phase (2015-2017), a new leadership team was formed, with a settled growth plan and secure financing. In the second phase (2016-2019), a renewed GT/sports car range would be manufactured, two special products would be produced plus a heritage special per year and the production and launch of Vantage and DBS Superleggera would also happen. This was considerably completed. In the third phase, the relaunch of Lagonda, the production and lunch of DBX, a new facility in St Athan, and a first mid-engine car would occur. The plan centered on a product strategy to launch seven new core models over seven years, with each model having a seven-year lifecycle (7 x 7 x 7), as we may see in image 7. In 2017, the plan began to show results, with positive earnings. However, the good news was short-lived. In 2018 and 2019, the negative earnings came back. The plan failed. The results were far from planned due to the lower wholesales of Vantage, there were higher selling costs and lower margins than expected which resulted in a lack of liquidity. The company had reset the plan and develop a plan/strategy to reduce the leverage, improve the liquidity, and gain more financial and operational stability and flexibility. To face this issue, a consortium led

Figure 7. 7x7x7 Strategy

***Source:** AML Annual Report 2019.*

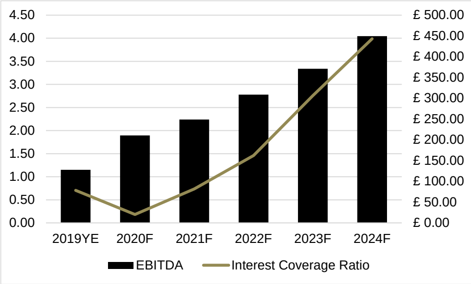
by Lawrence Stroll raised £536M through an equity investment and underwritten rights issue.

To manage medium-term investments, improve cash generation, restore price and margin discipline by an operating pull versus push model, reducing dealer inventories to a modern luxurious level, and improve efficiency, AML developed the following strategies:

- **Inspiring Customer through focused Luxury Products** – Invest in R&D to create innovative core products in both existing and emerging market segments, for a wide global luxury client base, besides exclusive and scarce Specials;
- **Reinforce global brand and strength sales** – To attract new customers, the company should use data and local awareness, cultivate greater brand loyalty and reinvigorate and strengthen the brand;
- **World-Class Value and processes** – Reduce the cost without jeopardizing the quality, through efficiency and lean processes;
- **Top Class Quality** – Passion to make top quality products, craving perfection in each one of its components and attention to detail; and,
- **Responsibility and People** – Develop and sustain a culture of great values such as passion, collaboration, and creativity, through ethical and transparent business.

Within the new plan, the Lagonda relaunch will only occur after 2025. The company will approach the Formula 1 (F1), with the collaboration of the Laurence Stroll Consortium. This is a good opportunity for the entity, since 80% of the premium and luxury car buyers in the United Kingdom, the United States, Germany, and Japan had an interest in F1 (according to AML). AML expects to start the deliveries of Goldfinger DB5 Continuations and DBS GT Zagatos in 2020, to launch DBX and to relaunch Vantage in 2020´s second quarter. Aston Martin Valkyrie had its deliveries scheduled for 2020's second semester, however, due to Covid-19, the deliveries will not happen until 2021. Additionally, AML continues the development of a fuel-efficient modular V6 engine with hybrid and plug-in capabilities to support the cars of the future, and launch two special cars and one heritage special every year. AML scheduled the deliveries of V12 Speedster and the revelation Aston Martin Valkyrie AMR Pro, for 2021. Lastly, Valhalla is predicted to be disclosed in 2022. The entity has been reforming and extending the dealer's network all around the world, however, with greater focus in the Asia-Pacific region with the aim of benefiting from the faster growth of HNWIs.

Figure 8. EBITDA vs Interest Coverage Ratio

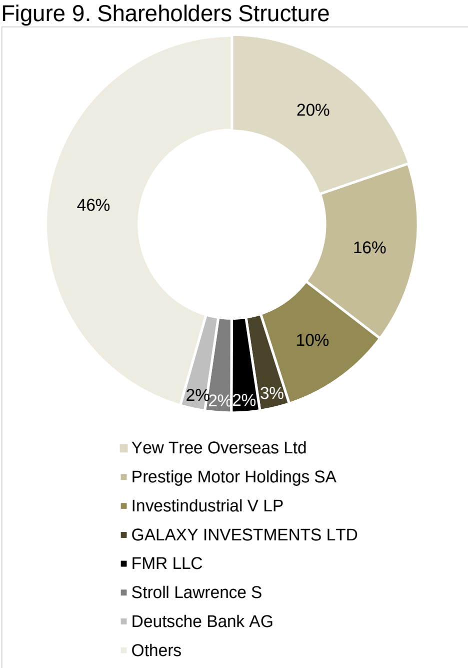


Source: *Student Analysis.*

Shareholders

AML entered the London Stock Exchange in October of 2018. The company placed 25% of its capital on the market, setting a price of £19 per share. This settled an equity valuation of £4 300M. However, the listing did not go as expected. The price dropped by more than 5%, suggesting the overvaluation of the company. According to Bloomberg and London Stock Exchange, in 2020, AML has 1 824M shares outstanding, with a public float of 1 582M (87%). AML´s largest shareholder is Yew Tree Consortium, with 20% control over the company. Prestige Motor Holdings SA is the second largest shareholder with 16%. Investindustrial V LP is the third with 10% of the voting rights. Additionally, with 3% is Galaxy Investments Ltd. There are three shareholders with 2% of the company: FMR LLC, Stroll Lawrence S, and Deutsche Bank AG. The rest of the capital (46%) is distributed amongst many shareholders. The capital is detained in 6.21% by Institutions, 48.13% by Strategic Entities (entities that invest for strategic stakes in companies), and 45.66% by others. The inside ownership accounts for 4.45% of outstanding shares.

Figure 9. Shareholders Structure



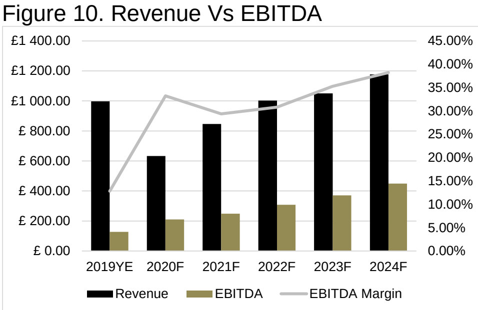
Source: *London Stock Exchange.*

As mentioned before, AML realized an equity raising of £536M. The recent pandemic, Covid-19, is causing some issues to the company. The virus is affecting the financial markets, decreasing the AML´s share value. With this, Laurence Stroll and its consortium gained more control over the company, with the same £536M.

Additionally, in June 2020, the company issued more 304M shares, raising a total amount of £152M. The outstanding shares are traded on the London Stock Exchange.

3. Management and Corporate Governance

Figure 10. Revenue Vs EBITDA



Source: *Student Analysis.*

The information in this chapter was gathered from AML sources. Lawrence Stroll serves as Executive Chairman of the group, since April of 2020, as a result of the investment in the AML´s capital increase. He is known for acquiring and enhancing luxury brands as Ralph Lauren, Michael Kors, Asprey, and Garrard. Mr. Stroll has a great passion for the luxury automotive and motorsport sectors, being an active investor in these sectors, and having a collection of luxury cars. In 2018, he led a consortium that purchased the BWT Racing Point F1™ team, which will be renamed as the Aston Martin F1™ team, starting in 2021.

Tobias Moers will be the AML´s CEO, starting in August 2020 and taking the place of Andrew Palmer, who was AML´s CEO since October 2014 and was the "Second Century Plan" architect. Mr. Moers has a large experience in the automotive industry, holding 25 years in a senior position on Daimler, which 7 years were leading Mercedes-AMG GmbH as its CEO and Chairman of the Management Board. With his leadership, Mercedes-AMG strengthened its brand positioning and improved profitability, delivering a strong financial performance with increased operating efficiencies and margins. Additionally, the company expanded its car portfolio and had a substantial increase in the number of units sold.

Kenneth Gregor has been the CFO since June 2020, after the departure of Mr. Mark Wilson, who was AML´s CFO since August 2015. Mr. Gregor has more than 20 years of experience in the automotive industry, holding the CFO position of Jaguar Land Rover for 11 years. With his leadership, Jaguar Land Rover has developed and delivered great value to its shareholders and achieved the company's growth ambitions through portfolio expansion, capital allocation, and financial planning. Before becoming CFO, he performed several other financial functions within the company and worked in investment banking at HSBC.

AML has been experiencing financial and liquidity problems in recent years. The capital increase brought an oxygen balloon to the company, which must be harnessed. AML developed a reset plan. It is time to initiate a new paradigm in the brand, and with new people, it may become easier. The company chose a CEO and a CFO with an incredible track records, as described before. In conclusion, it seems the company has selected the right people to develop the work ahead and to achieve AML's full potential.

Board Structure
The corporate governance structure and work follow the UK Corporate Governance Code. There are 9 seats on the Board of Directors with 6 (66.6%) non-executive directors, whom 2 (22.2% of the total seats) are independent. The Directors are appointed by the Board and are subject to annual re-election by stockholders. AML´s executive director's remuneration structure is divided into three parts: Fixed salary, Bonus, and Long-Term Incentive Plan (LTIP). The last two are subject to agreed objectives, although different. The LTIP is paid in shares.

Corporate Governance
AML´s adopt the Anglo-US corporate governance model. In a way, to ensure the board fulfills its objectives, some authority is delegated to committees, which must report to the board all the material matters.

- **Board of Directors** – the Board is committed to conceive value and ensure the business operates in a transparent and accountable way, with standards and values in compliance with legislative and regulatory rules. Also, safeguard the company has controls to face and manage its risks and the resources to meet its obligations through capital structure and allocation;

- **Leadership/Executive Commission** – responsible for all the operational activities, the team has a vast knowledge and experience of the automotive sector, which makes them able to execute the current strategy;
- **Audit & Risk Committee** – assists the Board on reviewing and monitoring the integrity of the financial information, the compliance with regulations, laws, and ethics; AML´s internal controls, corporate reporting and risk management; the internal and external audit process and auditors;
- **Nomination Committee** – establishes a formal, rigorous, and transparent procedure for the appointment of directors to the Board and senior executive office; and,
- **Remuneration Committee** – establishes a formal and transparent procedure for developing policy on compensation and set the compensation.

Sustainability and Social Responsibility

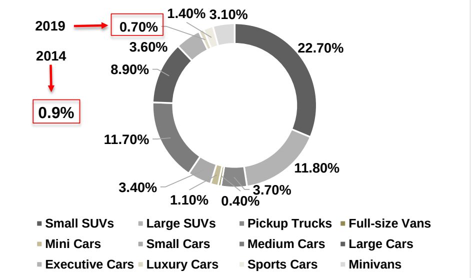
AML's sustainability strategy goals highlight four main areas: people, ensuring AML is a great place to work including health and wellbeing, diversity and inclusion, integration of the "AM Way"; environmental sustainability, with an environmental culture and best practices over the entire business which emphasis a decreasing greenhouse gases and energy and increasing recycling; social responsibility, where AML makes philanthropic activities and community engagements; and, sustainable supply chain with responsible and ethical sourcing and a commitment with Modern Slavery, where AML embrace procedures to safeguard modern slavery do not exist neither in the business, neither in the supply chain and expect their partnerships enforce policies and comply with the legislation. AML received the Sword of Honor Award for the 8th consecutive time and has a BSC Health and Safety audit score of 94.44%. According to the UN, AML supports 9 Sustainable Development goals (SDG) of the 17 submitted by the organization: Good Health and Well-being; Quality Education; Gender Equality; Clean Water and Sanitation; Decent Work and Economic Growth; Reduced Inequalities; Sustainable Cities and Communities; Responsible Consumption; and, Production and Climate Action.

4. Industry Overview and Competitive Positioning

Industry Overview & Competitive Positioning

The luxury automotive industry is composed of few automakers, whose products are diverse in the level of luxury. Within the industry, two main segments may be distinguished: the Luxury Segment (LS), where the price ranges is from € 90K to € 150K, and the High Luxury Segment (HLS), with prices over € 150K. AML is positioned in the last segment.

Figure 11. Passenger cars' revenues in 2019 (%)



Source: *Statista Mobility Market Outlook, 2020, adapted.*

HLS manufacturers have strong brand recognition, and the level of exclusiveness leads customers to see the cars as pieces of art, or even, as an investment class, since many models tend to have their value appreciated, due to the low volume produced. With this strategy, the brands create a sense of scarcity on the customers, which enables them to charge high selling prices.

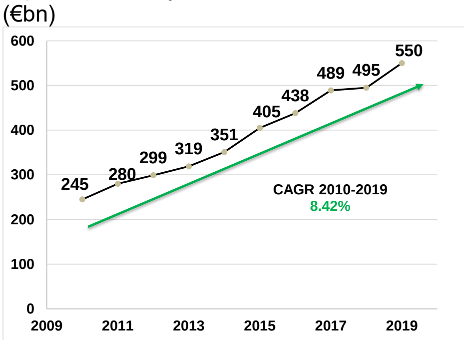
The market may be distinguished by the degree of sporting characteristics, hypercars, supercars, sports cars, grand tourer cars, super grand tourer cars, SUVs, and sedans. A higher level of luxury tends to increase the expectations for exclusivity, technology, design, performance, and prices. In the last few years, the SUV segment has been displaying fast growth. In 2019, the segment grew 100%, on the opposite, there has been a decline in the luxury and performance premium sports cars.

The market has been impacted by changes in regulatory requirements, mainly due to the revised emissions standards in Europe and China. These reviews set the emission targets for the period after 2020, which means that brands will have to produce cleaner cars with less fuel consumption. There will also be benefits in favor of electric cars. According to information published on the European Union's website, both regions have signed a *memorandum* of understanding on how they will intensify their cooperation on climate change and clean energy to drive a global transformation towards a low-carbon, climate-resistant economy, and society and a clean energy system.

Main Numbers and Geographies

According to Statista Mobility Market Outlook 2020, the luxury cars´ revenues, in 2019, were 0.7% of the total passenger cars' revenues. However, this figure may be higher if SUVs, sports cars, and undefined cars that belong to the luxury car' category are considered. Additionally, this report presents a limitation, it only considers 29 countries: European countries, China, and the USA. In 2014, luxury cars' revenues were 0.9% of the total passenger cars. Despite the decrease in percentage, luxury cars' revenues increased in absolute terms. Looking at the image 12, we observe that the luxury cars' sales grew at a CAGR of 8.42% between 2010 and 2019, reaching a world luxury car market revenue of €550bn in 2019, according to Bain & Company.

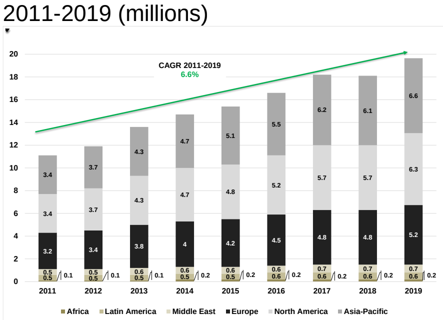
Figure 12. Luxury cars' revenues worldwide (€bn)



Source: *Statista, adapted.*

HLS's biggest market is EMEA, followed by ASIA and the Americas. HLS has been growing faster, according to Bain & Company. HLS CAGR between 2008-2012 was around 7%, and between 2012-2016 was about 8%. This shows a branch within the car industry that performed relatively well during the financial crisis. During 2019, the segment grew 11%. According to the Allied Market Research, the HLS is expected to grow at a CAGR of 5.2% between 2019 and 2026.

Figure 13. Number of HNWI by region, 2011-2019 (millions)



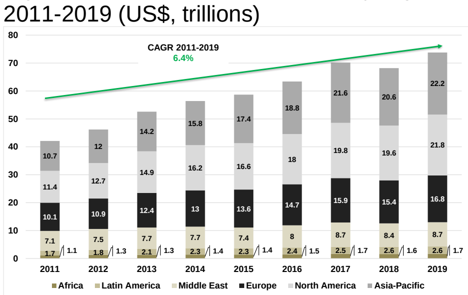
Source: *Capgemini, World Wealth Report 2020, adapted.*

Demand drivers – High net worth individuals are the driver of luxury consume

The global economic prospect affects disposable income and impacts the consumer's willingness to buy luxury goods. During recessions, the level of disposable income tends to decrease, negatively impacting the luxury consumer's confidence. The growth in the HLS´ sales is impacted by the expansion in the High Net Worth Individuals (HNWIs), which are the key customers in the market.

According to Capgemini (2020), despite the "global economic slowdown, international trade wars and geopolitical tensions", the HNWI's wealth throve by 9% in 2019, recovering from the 3% drop in 2018. The HWMI´s population followed this growth and achieved a 9% growth rate. The growth observed was mainly related to the European region and North America's performance. The latter region grew the most in 2019, 11% both in wealth and in number of HNWIs. Europe grew in line with the global average, 9%. Asia Pacific, which had been the fastest growing region in the world since 2012, only reached 8%.

Figure 14. HNWIs financial wealth by region, 2011-2019 (US$, trillions)



Source: *Capgemini, World Wealth Report 2020, adapted.*

Capgemini (2020) also asserts that the near-term global economic situation remains uncertain and this uncertainty only increased with the arrival of the Covid-19 pandemic. The projections for 2020' global growth predict a drop of 4.9%, a number that may increase with the effects of the pandemic. This will certainly affect the wealth and the willingness for new luxury car' expenses. However, it was seen that even in recessionary periods, HLS sales grew by a CAGR of 7%.

New Models – The Demand Engine

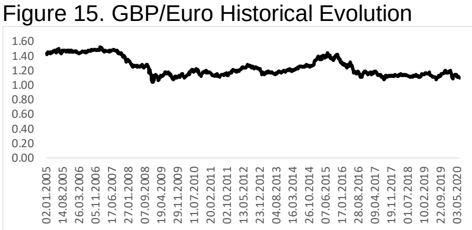
Despite being affected by macroeconomic variables, such as GDP and recent trends in the HNWI population, the demand in the HLS is mainly affected by the launching of new or enhanced models. By being aware of this demand characteristic, the brands tend to launch hypercars and special editions, which are the top luxury models within the industry, produced in limited volumes and with higher margins. These cars had a compounded growth rate of 22% from 2012 to 2016. With the introduction of new derivatives, performance upgrades, new personalization options, and improved quality, the brand may maintain the demand through the lifecycle of the car. However, there are other factors that could impact the appeal to buy HLS cars (e.g. social acceptance, economic unpredictability, lower-income streams, and return on investment).

Supply Factors

The HLS has experienced growth in both units delivered and revenues worldwide. In this market segment, companies have a strategy of matching demand with supply as a means to practice high margins. In addition, for some automobiles, the companies might produce less than the demand as a way to obtain higher profit margins. Examples of this are special and hypercars. The capacity of each player in maintaining and improving dealership network and post-sales services availability during slower economic periods may become crucial to maintaining sales, as well as costs associated with a certain category of the luxury car.

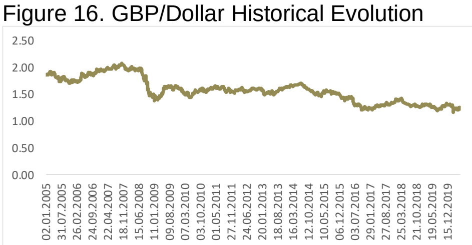
Regarding cost structure, it is important to analyze the variable and fixed costs in this sector. The first is incurred with the research, plan, manufacturing, and selling of the product. One example of this cost are the raw materials. According to Marketrealist, an automobile, on average, has in its components: 47% steel; 8% iron, 8% plastic, 7% aluminum, and 3% glass. In total, raw materials account for 47% of the cost of producing a vehicle. It shall be noticed that aluminum's use was, and still is, limited in the general car manufacturers industry. However, HLS is going towards a shift in the usage of aluminum instead of steel, as part of a trend to decrease the heaviness of luxury cars and enhancing performance without necessarily incurring in more pollution. Other two examples are the sales' tax and the dealership markups, which the company must include in the manufacturing costs to make a profit. Fixed costs per product are in general high in HLS due to the low productions. The first example of these costs is the production line and its maintenance, which could be lower per product if two or more products could be produced in the same line. Other fixed costs are the human resources salaries, benefits, the plant, and real estate. One of the major costs is the investment in R&D, which could account for 16% of the manufacturing costs. Ferrari, for example, invested 18.6% of net revenues in R&D activities in 2019, and 18.8% in 2018, while AML invested 25% in 2019 and 21% in 2018. The final examples are advertising and logistics costs.

Figure 15. GBP/Euro Historical Evolution



Source: *Investing.com, adapted.*

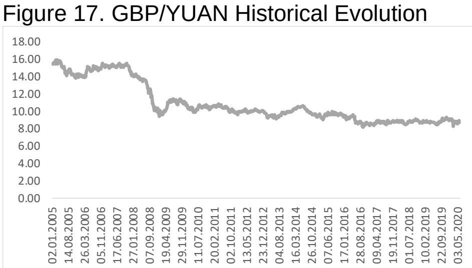
Figure 16. GBP/Dollar Historical Evolution



Source: *Investing.com, adapted.*

In the end, the company that more efficiencies create in its cost structure, could reduce its costs, and get a higher margin from its products. There are cases of products that have little or even negative margins that the company manufactures and sells, only to gather the status and publicity that the product gives and because it helps to sell the other models. According to CNBC Make It, Dr. Ferdinand Dudenhoffer (director of CAR-Center Automotive Research) conducted a study on the margin made by Ferrari with its luxury cars. According to him, the margin could be computed by dividing the EBIT by the number of cars sold. This is only an approximation, because the EBIT may consider other costs that should not be imputed to the cars, and due to changes in the price of the inputs, we may have different prices per car in different years.

Figure 17. GBP/YUAN Historical Evolution



Source: *Investing.com, adapted.*

Innovation – HLS Driving Force

Innovation is crucial in the whole automotive industry and even more in the HLS. Exclusiveness is highly connected with the innovation capabilities of players in the market and investing in R&D is key to achieve it. Electric and hybrid models are a reality in the segment, in which environmental issues are a concern. Although costs are currently a restricting factor, they are expected to decrease with the progress in technology. Players are currently seeking for greener ways to operate in the segment, maintaining features seen as part of the exclusivity of these goods: comfort and performance. Players in the industry are also investing, monitoring, and contributing to the advance of autonomous driving technologies and how it will impact the automobile market, especially HLS. Autonomous driving technologies are an enhancing technological feature, bringing to cars: sensors, artificial intelligence applications, and driving assistance systems. Cars will be smarter and more autonomous. Players are positioning themselves for this reality. Improvements in electromobility are also expected to be a natural path in the car industry. Additionally, according to the identified public information, none of the HLS players should have a car for sale before 2025, except Porsche. AML had plans to launch its first electric vehicle: the Rapide E. However, with the need for a capital increase, the plans for electric cars were suspended indefinitely, and there is uncertainty if any is going to be launched until 2025. The Lagonda brand, which will only have electric cars, is not going to be relaunched before 2025, as mentioned earlier. Considering this, luxury automobile players are focusing on hybrid vehicles, while the electric market is developing. Even suspending its electric car program, AML remains at the vanguard of the luxury electric car market.

Covid-19

The Covid-19 pandemic brought changes never expected before. The countries closed the borders and/or placed many restrictions. At the beginning of the appearance of the virus, most of it was focused on the Asian region therefore impacting the customers' demand and supply chain in the region. At that moment, some components from China were disrupted and the data showed a 92% decrease in car sales, in the first fortnight of February (according to BBC). The virus spread all over the globe, and now, it is impacting the supply chain and demand of other countries. The financial markets have been highly affected due to the increase in uncertainty. Covid-19 is also affecting the companies' performance, increasing the risk they could face and impacting the growth rates. AML as the other brands had many of its dealers closed or operating with severe restrictions.

To analyze the sensitivity of HLS to crises, we will have to divide the crises into three parts: pre-2008 crises, financial crisis 2008, and Covid-19 crisis. According to publicly available information, in pre-2008 crises, the sales at the HLS were stable or suffered only a slight decrease.

In the 2008 Financial Crisis, the biggest drops in luxury car sales were felt in developed countries. The drop in second-hand car prices also supported the drop-in demand for new cars. Some luxury car producers saw the biggest drop in sales coming from ultra-wealthy individuals. These were not worried about employment or loans, as they were still rich enough to buy cars. However, one of the effects of the crisis was a decrease in their confidence and optimism. Additionally, these individuals could be holding on to greater liquidity during the uncertain period, so that they would have funds to support their business(es), seize opportunities, or have coverage for some emergency.

The Covid-19 crisis seems to be different from the 2008 Financial Crisis. During the 2008 crisis, there was no liquidity, and it was difficult to obtain credit. In the Covid-19 crisis, the one we are facing, there is liquidity. Therefore, at the end of the day, which prevents individuals from buying a car is their physical well-being, having to go to the stand, since there are no online sales. With the opening of the countries' economy, it is possible to observe the increase in demand. Additionally, one of the ways to increase demand in times of crisis is with the launch of new products, as HWNI are often tempted to buy the latest editions. This crisis has occurred in a year in which AML is launching strong new products, which are having incredible pre-orders. Crises are usually an opportunity to acquire car parts and technology at a lower price. Nevertheless, the Covid-19 crisis is different, since, with the initial closure of borders between countries, the purchase of products from other countries has become more difficult. However, AML was able to elaborate a good stock of car parts, at the beginning of the crisis, thus the production would not be affected. Additionally, the company stopped operating for about a month, however, production was not strongly affected.

Peer Companies

In this section, ALM will be compared with its peers. As said before, the HLS is constituted by a few companies, however, each one has different realities. Only one company was chosen as a sample as it is the only public company similar to AML. In the HLS, some companies are publicly held as Ferrari (Italy) and Aston Martin Lagonda (United Kingdom). Others are incorporated in a group, like Lamborghini and Bentley (Volkswagen Group, Germany), and others are private as McLaren (United Kingdom). Additionally, in addition to all commercializing automobiles, their focus on sustainable profitable growth, and having high R&D investments, each one has different services/products in their portfolio, which could constitute a limitation to the comparison.

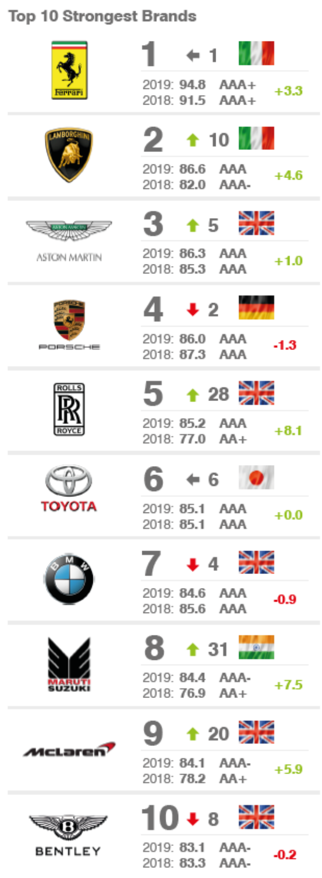
Looking at Appendix 11, we are able to understand that AML is behind Ferrari in financial terms. The data refers to 2019 and was collected from the Bloomberg platform. In terms of sales, Ferrari has a volume three times larger than AML. Ferrari's margins are higher than AML's, which exhibit greater efficiency and profitability. AML's recent negative returns put its ROIC at -8.18%, while the Ferrari one stands at 19.89%. In addition, it is possible to see AML's higher use of debt compared to Ferrari.

According to Brand Finance Global 500 of 2019, Aston Martin is the third strongest auto brand, with a Brand Strength Index (BSI) of 86.3 points. In second place was Lamborghini, with an additional 0.3 points, and at the top of the list was Ferrari, with 94.8 points. In the top ten, we can find Porsche in the 4th position, Mclaren in the 9th, and Bentley in the 10th.

In the end, the brands have many strategies in common, such as:

- Investing in driving automation technologies and the application of electric and hybrid engines;
- Investing in technologies with the purpose of adding new displays, innovative clusters, and new steering wheels, featuring new commands to improve the owner's experience;
- Keeping the customer at the center of all activities, providing a range of personalized services, augmenting the exclusivity aura, the perceived emotions, and improving loyalty;
- Keeping the pace with updates in R&D and launching new and enhanced products at least yearly, which is key to create demand and enhance relations with customers;
- Building relations and developing synergies with suppliers and peers, which could be clients for components/services;
- Implementing a more consistent production worldwide through the application of uniform standards; and,
- Pursuing a controlled and profitable growth in existing and emerging markets.

Figure 18. Brand Strength Index (BSI)



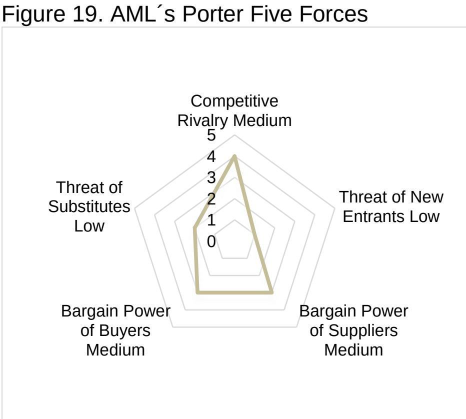
Source: *Brand Finance Global 500 of 2019.*

Porter Five Forces Analysis of HLS

Competitive Rivalry – Medium

The AML faces few competitors in the high luxury segment, which enables each one to monitor the moves from the others. The market is growing at a fast pace and is expected to remain, although there is no apparent need to dispute market share, competitive action may be expected from some players. However, that will be difficult to execute. As the products are highly differentiated, the costumers would buy the car with the features that bring more value for them. HLS is characterized by having high exit barriers due to the high initial investments, high expenses in R&D, and government regulations.

Figure 19. AML´s Porter Five Forces



Source: *Student Analysis.*

Threat of New Entrants – Low

As AML, most of the market players have high brand recognition and a history of iconic exclusive products. The market has limited economies of scale since the players have a low production strategy to enable them to sell at high prices. To enter this market, the companies have high initial capital requirements and pass rigorous licensing and legal requirements to operate (high government regulations).

Bargain Power of Suppliers – Medium

In this market, the Aston Martin Lagonda and the other players suffer from medium bargain power from the suppliers, due to the narrow number of them delivering high-quality inputs.

Bargain Power of Buyers – Medium

The players in HLS face a medium bargain power from the costumers. As mentioned before, the HNWIs are the target customers. At the decision time, they select the brand in which they have a higher value perception, either in terms of performance, design, or reputation. However, the players are protected from some of the bargaining power: as the products in the market have high differentiation, each car is considered unique, which prevents the costumers to switch brands.

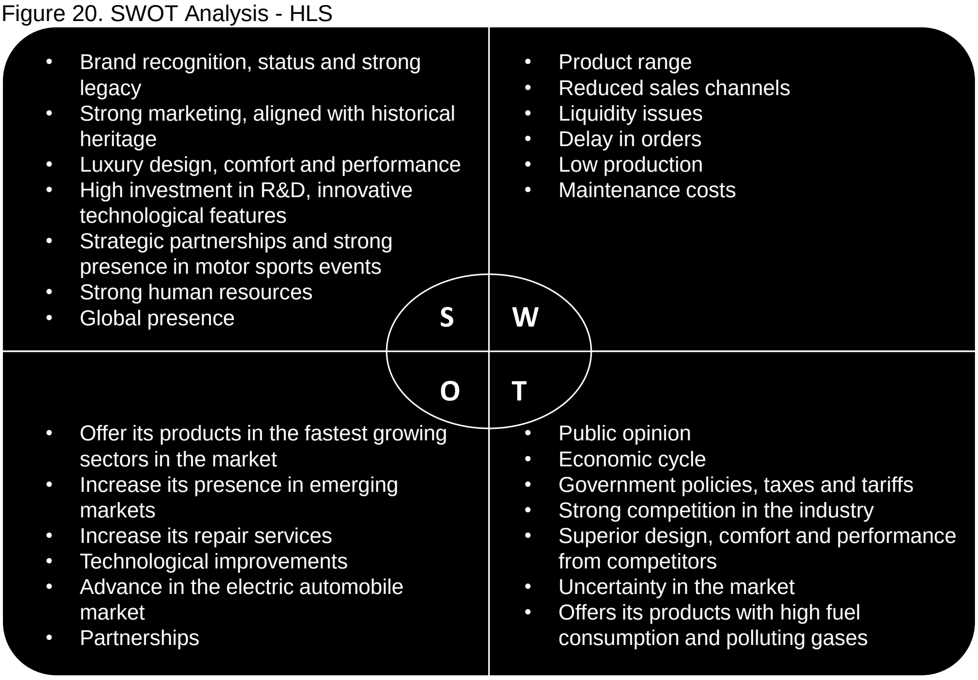
Threat of Substitutes – Low

The threat of substitutes is low in HLS. As previously mentioned, there are a small number of players and the products have high differentiation. Despite belonging to the same car segment, there is a sense of uniqueness associated with every vehicle, which ends up creating a degree of customer loyalty.

SWOT Analysis – Segment Comparison

The following figure 20 compiles AML's strengths, weaknesses, opportunities, and threats (SWOT analysis). The main strength of AML is its strong brand recognition and legacy, which makes the consumers relay that ALM´s cars have the top luxury design, comfort, and performance that they look for. On the opposite side, AML has a short product range and has been suffering from some liquidity problems. Looking at the opportunities, AML is positioning itself to take a great stance in the new luxury electric automobile market, through Lagonda (the first zero-emission luxury brand). The market uncertainty, government policies, and high competition in the industry are some of the threats that AML envisages.

Figure 20. SWOT Analysis - HLS



Source: *Student Analysis .*

5. Investment Summary

My Aston Martin Lagonda Valuation target price is £0.84/sh for 2020YE, stating a Buy recommendation and representing an upside potential of 31.75% from the 2020's Q1 price of £0.64/sh. Additionally, a share price of £0.85/sh was obtained with the Residual Income method and a result of £1,39/sh was obtained with the APV method. These two methods support the recommendation given by the FCFF method. Aston Martin Lagonda is the only independent luxury car company in the world that has more than 100 years of experience in two brands. The company designs, produce, and sell luxury cars in the four corners of the world, through its dealer network. Additionally, AML composes its revenues with the sale of parts, servicing of vehicles and brands, and motorsport.

Table 4. FCFF Valuation

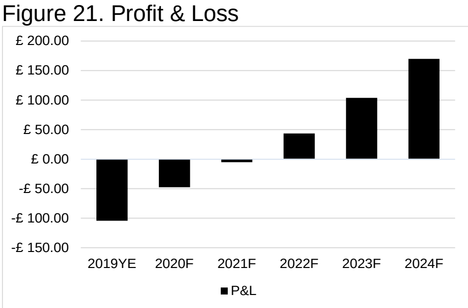
in Millions	2020F	2024F
Net Income	-£47.62	£169.87
Interest*(1-tax rate)	£61.25	£46.00
Non Cash Charges	£197.33	£220.34
Net increase in WC	£152.67	-£41.45
CAPEX	£194.65	£310.50
FCFF	-£136.36	£167.16
t		4
WACC		7.34%
g		1.67%
DCF	-£136.36	£125.94
Firm Value	£1 877.04	
Equity value	£1 394.10	

Source: *Student Analysis.*

In this year, the company suffered a huge price drop, following the market crash associated with the Covid-19 pandemic. Despite this current loss, the AML share price should drive up due to the entry of a new management team, with the goals of reduced debt, reduced expenses, improvement of the liquidity and profitability. Furthermore, it is expected growth in the revenues with participation in Formula 1 and the supply reduction, increasing the margins per car. Despite the Covid-19 outbreak, the company almost sold all the specials for 2020 and the new SUV DBX had an incredible pre-order book. This culminates in a Net Income forecast of -£47.62M in 2020, but with the value increasing YoY targeting a value of £169.87M in 2024, as shown in image 21.

Since 2015, AML has been following the strategies defined in the second-century plan. The plan gave its results when, in 2017YE, the company accomplished a positive P&L value. However, the 2018YE and 2019YE were terrible, with a return to negative results and the increase of debt. The company has been hit hard with the trade war between the USA and China, the Brexit, and now, the Covid-19 pandemic. Despite these factors, 2020 seems to be a turnaround year for the company. In 2020, Laurence Stroll bought a significant share of the company, assuming the position of Chairman, bringing with him the former CEO of Mercedes AMG, Tobias Moers, and the former CFO of Jaguar Land Rover. Additionally, a reset plan was built to match the supply to the demand, deleverage the company, and build a strong Aston Martin Brand with a presence in Formula 1.

Figure 21. Profit & Loss



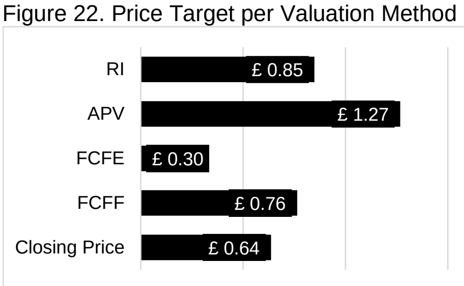
Source: *Student Analysis.*

6. Valuation

Valuations Methods

The first method used to value AML was the Free Cash Flow to the Firm (FCFF), since AML is a leveraged company with an expected changing capital structure, obtaining a target price of £0.84/sh. To support the recommendation, the Adjusted Present Value (APV) and the Residual Income (RI) were computed. The last one was chosen since AML does not pay dividends and it is not expected that it will pay in the foresaw future. This is also the justification for rejecting the Dividend Discount Model (DDM). Despite the expected changes in AML's capital structure, the Free Cash Flow to Equity (FCFE) was computed as a way to complement the valuation. The first three methods are coherent with each other, pointing to a target price between £0.84 and £1.39, supporting the Buy Recommendation. The FCFE points to a target price of £0.42, recommending a Sell position. This low value is explained by the growth stage that the company is inserted in, with heavy reinvestment and no dividends, AML debt repayment and the terminal growth rate. The key factors influencing the valuation are the ones presented in the following paragraphs.

Figure 22. Price Target per Valuation Method

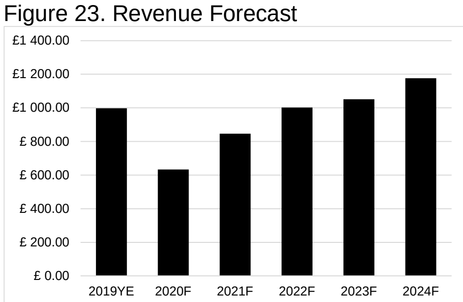


Source: *Student Analysist.*

Revenues

Aligned with the Covid-19 outbreak, it is expected that the revenues will have a decrease of around 36% this year. AML´s 2020 and 2021 revenues are supported by the sale of various special cars, that are almost all sold before the deliveries, and by its first SUV, as it is possible to see in Appendix 13. For 2022 and the following years, it is expected an increase in the revenue's growth, following the world GDP one and the AML´s historical 10-year and 5-year CAGR. In addition, the growth in the forecasted revenues is supported by the increase of the AML´s portfolio, its presence in Formula 1, and the reduction of the supply, to follow the demand and increase the margins.

Figure 23. Revenue Forecast

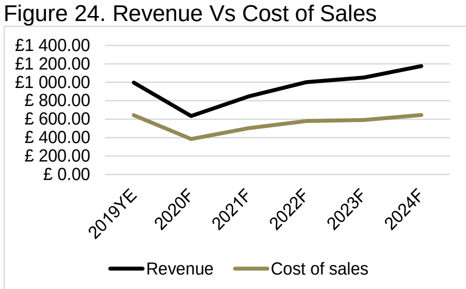


Source: *Student Analysis.*

Costs

AML is applying a strong financial discipline, planning to reduce its expenses in 2020, and continue the reduction in the following years with controlling costs, planning the marketing spending, and making consistent investments to restore profitability in the company. The company wants to position its products at a luxury level, in order for this to happen, it needs to resize its organizational structure and adapt its cost levels to the intended production. This cost reduction will be offset with the increase of efficiency and productivity in every cost segment. The prices of raw materials and

Figure 24. Revenue Vs Cost of Sales



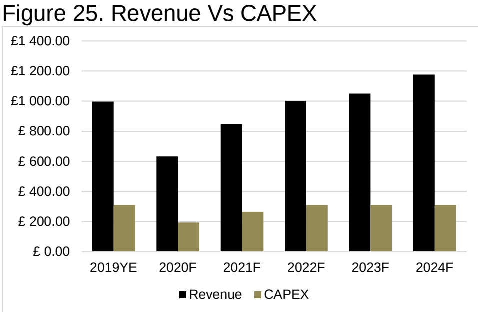
Source: *Student Analysis.*

car components are not expected to increase. Also, the company intends to decrease its total debt, thus reducing the leverage and financial expenses.

CAPEX

The amount invested in CAPEX is expected to decrease in 2020 to £194.65M, due to the pandemic impacts and to restore AML´s liquidity reducing the expenses/investments. The value is expected to increase in 2021 to £265.65M and reach pre-Covid-19 values in 2022, assuming a value of £310.5M. In the next forecasted years, the values were estimated to continue increasing and go over £300M every year. The forecasted CAPEX value was estimated trough the historical five years (2015-2019) moving average of the ratio CAPEX to Sales, with a cap of £310.5M (equal to 2018YE and higher historical value), to stabilize the CAPEX, otherwise, it will continually increase with the sales. This investment will enable AML to grow organically, expanding its portfolio, and deliver to the market new luxury cars with continuous improvements in performance, technology, quality, and design, to face and gain costumers from its peers.

Figure 25. Revenue Vs CAPEX

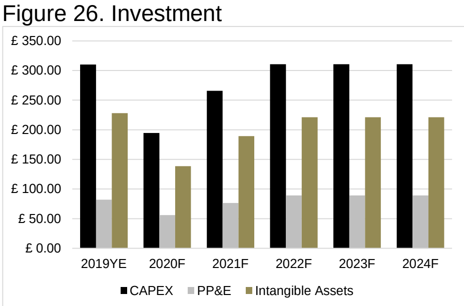


Source: *Student Analysis.*

Net Working Capital (NWC)

In the calculation of the NWC, were added the values of the lines, inventories, trade and other receivables, Income tax receivable, and subtracted the values of the lines trade and other payables, Income tax payable. The inventories were calculated based on three factors, as explained in Appendix 14. While trade and other receivables were calculated considering the Collection Period days, trade and other payables were calculated considering the Payables Period days. Assuming a more efficient operational management was estimated, for both, a decreasing number of days in each year, to reach the 2017 YE number of days. Finally, both lines, Income tax receivable and Income tax payable, were estimated as a proportion of sales, considering historical data. For more information, see Appendix 8. The NWC is negative every year and has a downward trend. This is explained by the entity's accounting policies and the fact that AML receives advances from its sales before paying its suppliers. This is later explained in the chapter "Financial Analysis".

Figure 26. Investment



Source: *Student Analysis.*

WACC Assumptions

The **cost of equity** (rate of return required from the shareholders) was computed applying a modified CAPM model: fluctuates between 7.16% and 7.60% in the forecasted years (2020-2024) and has a value of 9.56% in the Terminal Period. The benchmarked used for the risk-free rate (RFR) was the United Kingdom Government Bond yield fluctuating between 0.32% and 2.75% (corresponding to the bond yields between 10 years and 30 years), this was also used as a proxy of the market forecasts. More information in Appendix 18. Despite AML having sales worldwide, the company is sensitive to the United Kingdom risks, since the majority of its costs and operations are in the UK. Considering this, a Country Risk Premium (CRP) was added to the Market Risk Premium (MRP) in the cost of equity calculations. The market risk premium (the difference between the expected return on a market portfolio and the risk-free rate) was computed using the Survey: Market Risk Premium and Risk-Free Rate used for 81 countries in 2020 (March 25, 2020) outputs. The CRP was added to the MRP and it was obtained a value of 5.33% in the forecasted years (2020-2024) and has a value of 5.31% in the Terminal Period. The levered beta (systematic risk) was computed using the unlevered beta output of AML´s most similar peer (Ferrari) plus an adjustment of 0.4, obtaining a value of 1.28. The levered beta was calculated using 4 approaches: relations between the index returns and AML ones for four United Kingdom indexes. Additionally, three pure-play method calculations were computed: using all types of automobile peers; the most similar peer that has public information (Ferrari); and, industry values. For the calculations of the Pure-Play Method, it was used the equity and debt market values. The equity market value was estimated based on the Price to Book approach and the Debt market value was estimated assuming the book value as a proxy. The method chosen proved to be the most consistent and best suited to AML. More information in Appendix 18.

Table 5. AML´s WACC

DCF Analysis	2020F	TV
Risk Free Rate	0.32%	2.75%
Beta	1.28	1.28
MRP + CRP	5.33%	5.31%
Cost of Equity	7.16%	9.56%
Cost of Debt	6.93%	7.23%
Tax Rate	17%	17%
Weight of Equity	76.41%	85.00%
Weight of Debt	23.59%	15.00%
WACC	6.83%	9.03%

Source: *Student Analysis.*

The **Cost of Debt** was computed based on the 2019YE interest expense over total debt. Additionally, to complement the estimation a spread linked to the 3-month LIBOR was added to the cost of debt YoY. This because the bank´s spread is constantly changing, linked to changes in the interest rate market, as do bonds with variable interest rates. The cost of debt fluctuates between 6.93% and 7.05% in the forecasted years (2020-2024) and has a value of 7.23% in the Terminal Period. (Appendix 19).

The **WACC** was computed considering the market values of debt and equity, and the changing capital structure of the company, targeting an Equity ratio of 85% for the terminal value. The WACC rate fluctuates between 6.83% and 7.34% in the forecasted years (2020-2024) and has a value of 9.03% in the Terminal Period. More information in Appendix 20. Additionally, the **unlevered cost of capital** was computed, using an unlevered beta of 1.12. The rate fluctuates between 6.29% and 6.72% in the forecasted years (2020-2024) and has a value of 8.69% in the Terminal Period. More information in Appendix 18.

Terminal Growth rate

The AML´s terminal growth rate was computed considering AML´s reinvestment rate, the return on equity (ROE), and the Return on Invested Capital (ROIC). The value was assumed to be the forecasted median (2020-2024) less an adjustment of 1.96% due to the uncertainty period related to Brexit, Covid-19, and the company´s capacity to implement the reset plan, being 1.67% for the FCFF and 0.69% for the FCFE. Besides its more than 100 years of history, AML has a great progression margin to conquer market share from its peers through portfolio expansion. More information in Appendix 21.

Peer Group

As mentioned before, the HLS is constituted by a few companies, however, each one has different realities. Some companies are publicly held, others are incorporated in a group and others are private. For the relative valuation, two peer groups were chosen. The first one, a group with 9 peers in the automotive industry. These companies have a segment/subsidiary or at least one automobile in the HLS. The companies may be observed in table 6. The second group only has 1 company, Ferrari. Although Ferrari operates at HLS and is listed in the stock exchange resembling AML, it offers different services/products in its portfolio, which could be a limitation for comparison.

Table 6. Group 9 Peers

Company
Ferrari NV
General Motors Co
Bayerische Motoren Werke AG
Toyota Motor Corp
Volkswagen AG
Honda Motor Co Ltd
Daimler AG
Tesla Inc
Ford Motor Co

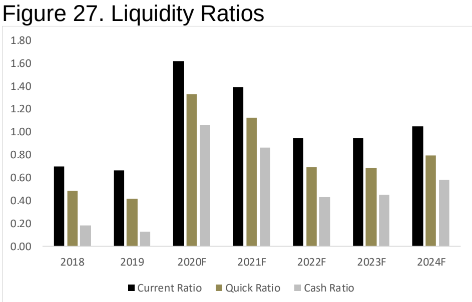
Source: *Student Analysis.*

Relative Valuation

The objective of the relative valuation is to support the results obtained by the FCFF model. However, as previously mentioned, even though the peers' groups chosen operate in the same segment of the automotive industry as AML, the companies may not be highly comparable. In the 9 peers´ group, it was obtained a target price of £1.04 using the EV/EBITDA ratio median representing an upside potential of 63%. In the Ferrari group, the result was £2.61, using the same method, representing an upside potential of 311%. In Appendix 26, it is possible to see a summary of the results obtained using other ratios.

In the following table, it is possible to see the average target price obtained with the median price and enterprise value ratios for each one of the groups. The results reveal more conservative values in the 9 peers' group and bolder ones in the Ferrari group.

Figure 27. Liquidity Ratios



Source: *Student Analysis.*

Table 7. Relative Valuation Price target

	9 Peers		Ferrari	
	P Ratio	**EV Ratio**	**P Ratio**	**EV Ratio**
P/sh	£0.06	£0.49	£4.91	£1.86

Source: *Student Analysis.*

7. Financial Analysis

Liquidity

AML faced some difficult years in terms of liquidity and cash generation, due to a lower than planned performance: lower sales, higher costs, and lower margins. However, the new capital increase should have the capacity to redirect the company to a good path. A few of the objectives of the reset plan are to increase cash generation, deleverage the company, and increase liquidity. Considering this, I estimated an upgrading, in terms of cash generation the cash ratio increases from 0.13 on 2019YE to 0.58 on 2024F. Additionally, the other two ratios seem to follow this path. The quick ratio increases from 0.42 on 2019YE to 0.80 on 2024F, whereas the current ratio increases from 0.66 on 2019YE to 1.05 on 2024F.

Efficiency

During the forecasted period, AML faces a slight decrease in the efficiency of its fixed and total assets. There was a decrease in the operating cycle from 195.32 days on 2019YE to 150.79 on 2024F, this due to the slight decrease of the days in inventory and a huge decrease in the collection period days. The company had a negative cash cycle, that may be explained with the costumers' advances. When the company opens a car pre-order book, the customer must pay a percentage of the car in advance, and this value goes directly to the account payables according to company accounting policies. The cash cycle has a negative value and in the forecasted period the value increases from minus 152.07 days on 2019YE to minus 164.79 days on 2024F. This increase in 12 days is mainly due to the lower decrease in the payable days since the company started paying some of its liabilities, compared to the decrease in the collection period days.

Profitability

AML improved all its margins during the forecasted period, reflecting a new era in the company. The Gross profit margin used to assess a company's financial health and business model, increased by 9.61% from 2019YE to 2024F. All other margins have shown a clear trend of increasing the cash available after deducting their costs. The EBIT margin goes from -3.68% on 2019YE to 18.79% on 2024F. Net Profit Margin followed this rise, from -10.47% on 2019YE to 14.44% in 2024F. Additionally, it is possible to see an increase in efficiency by the company management in using its assets to generate earnings. The ROA increased from -4.68% in 2019YE to 6.06% in 2024F. AML is increasing its capacity of generating profits from its equity: the ROE increased 42.07% from 2019YE to 2024F.

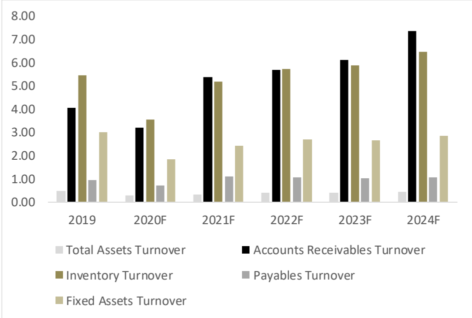
Solvency

One of the main objectives of AML, with the reset plan, is to deleverage. Considering this, I estimated a decrease of long and short-term Debt Ratio from 42.75% in 2019YE to 24.57% in 2024F. Activities were financed with the capital increase in 2020 and the earnings retention. The growth in EBITDA, combined with the decrease in debt, reduced the Debt to EBITDA ratio from 7.46 in 2019YE to 1.53 in 2024F. The interest coverage ratio shows a clear financial improvement changing from 0.71 to 3.99 during 2019YE-2024F.

Value Creation and Cash Flow Ratios

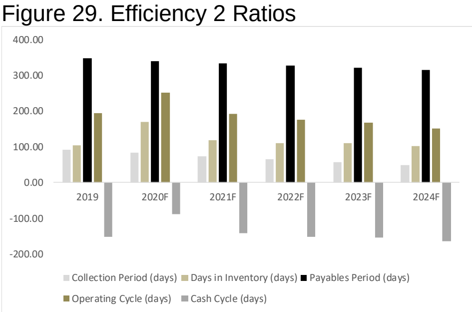
AML increased its financial performance over the forecasted period. The Economic Value-Added increase from -124.18 in 2020F to 30.93 in 2024F. Looking at the Debt Coverage, we can see an increase of 0.36 on the ability to generate enough income in its operations to cover the expense of debt. The pound of cash flows from operating activities per pound of operating income increases 2.52 from 2019YE to 2024F. The Earnings Quality increased by 0.95 in the same period.

Figure 28. Efficiency Ratios



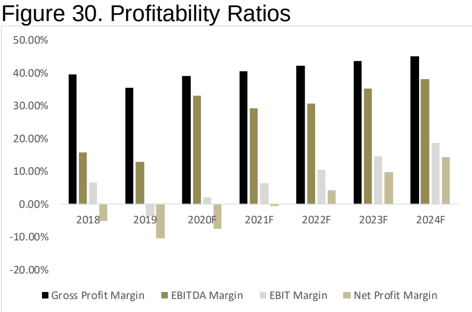
Source: *Student Analysis.*

Figure 29. Efficiency 2 Ratios



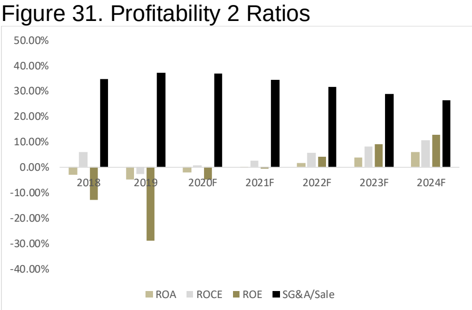
Source: *Student Analysis.*

Figure 30. Profitability Ratios



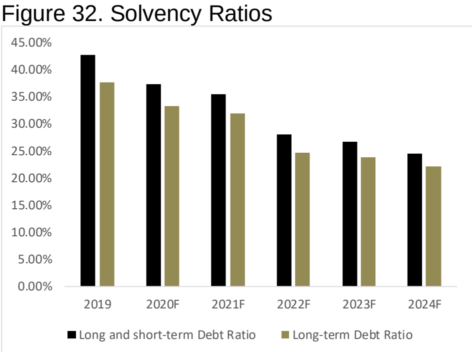
Source: *Student Analysis.*

Figure 31. Profitability 2 Ratios



Source: *Student Analysis.*

Figure 32. Solvency Ratios



Source: *Student Analysis.*

Scenario Analysis

Various scenario analyses were performed to visualize how the estimated target price reacts at some changes in the assumptions, as revenues and expenses.

In the first scenario, there was a decrease/increase of 10% in the revenues . In the decrease scenario, all the valuations methods suggest a clear sell recommendation, with the FCFE reaching a price target of £0.

	FCFF	FCFE	APV	RI	Market Price 31/03/2020
Equity Value	£497.66	-£36.04	£839.10	£783.56	
# Shares	£1 824.01	£1 824.01	£1 824.01	£1 824.01	
Price/sh	£0.27	£0.00	£0.46	£0.43	£0.64
Upside potential	-57.14%	-103.10%	-27.74%	-32.52%	

Source: *Student Analysis.*

In the increased scenario, all the valuations methods suggest a clear strong buy recommendation.

	FCFF	FCFE	APV	RI	Market Price 31/03/2020
Equity Value	£2 732.86	£1 849.99	£3 736.93	£2 289.41	
# Shares	£1 824.01	£1 824.01	£1 824.01	£1 824.01	
Price/sh	£1.50	£1.01	£2.05	£1.26	£0.64
Upside potential	135.35%	59.32%	221.83%	97.16%	

Source: *Student Analysis.*

The second scenario tries to demonstrate what could happen if the company could not perform the expected cost reductions. In this scenario, the company would only reduce the cost of sales by 1% YoY. Selling and distribution expenses would be reduced by 0.1% YoY and the Administrative and other expenses would be reduced by 1.5% YoY. The results show the importance of an effective cost reduction. In this scenario, the recommendation would be to sell, with all the valuation methods giving a price of £0/sh.

	FCFF	FCFE	APV	RI	Market Price 31/03/2020
Equity Value	-£1 633.17	-£1 954.04	-£1 881.85	-£804.56	
# Shares	£1 824.01	£1 824.01	£1 824.01	£1 824.01	
Price/sh	£0.00	£0.00	£0.00	£0.00	£0.64
Upside potential	-240.65%	-268.28%	-262.07%	-169.29%	

Source: *Student Analysis.*

The third scenario computed the maximum or minimum proportion that the 2020F rubrics could have from the 2019YE, with the goal of obtaining a price of £0.70, maintaining the rest constant. Considering the revenues, this percentage is 61.45% and states the breakeven in which a lower percentage it would mean a "reduce" recommendation.

	FCFF	FCFE	APV	RI	Market Price 31/03/2020
Equity Value	£1 276.81	£422.30	£2 140.81	£1 467.21	0
# Shares	1824.014	1824.014	1824.014	1824.014	0
Price/sh	£0.70	£0.23	£1.17	£0.80	£0.64
Upside potential	9.96%	-63.63%	84.37%	26.36%	0

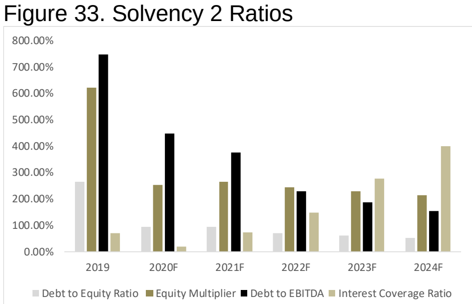
Source: *Student Analysis.*

Considering the Cost of Sales, the breakeven is 60.81% and states the percentage in which a higher one it would mean a "reduce" recommendation.

	FCFF	FCFE	APV	RI	Market Price 31/03/2020
Equity Value	£1 276.81	£415.58	£2 146.55	£1 443.90	0
# Shares	1824.014	1824.014	1824.014	1824.014	0
Price/sh	£0.70	£0.23	£1.18	£0.79	£0.64
Upside potential	9.96%	-64.21%	84.86%	24.35%	0

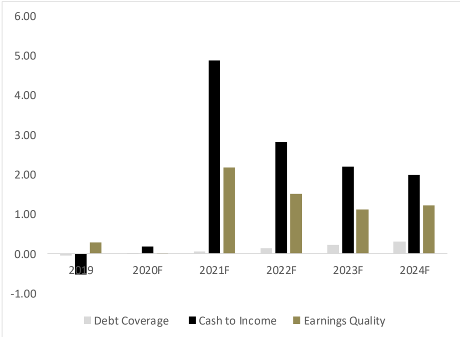
Source: *Student Analysis.*

Figure 33. Solvency 2 Ratios



Source: *Student Analysis.*

Figure 34. Value Creation and Cash Flow Ratios



Source: *Student Analysis.*

Table 8. Terminal Growth Rate Sensitivity analysis

Terminal Growth Rate	Target Price
2.57%	£0.98
2.27%	£0.93
1.97%	£0.88
1.67%	£0.84
1.37%	£0.80
1.07%	£0.76
0.77%	£0.73

Source: *Student Analysis.*

Table 9. Levered Beta Sensitivity analysis

Levered Beta	Target Price
2.18	£0.40
1.88	£0.51
1.58	£0.65
1.28	£0.84
0.98	£1.12
0.68	£1.57
0.38	£2.39

Source: *Student Analysis.*

Table 10. Monte Carlo Simulation percentile

Percentile	Forecast values
0%	£0.22
10%	£0.47
20%	£0.57
30%	£0.65
40%	£0.74
50%	£0.84
60%	£0.95
70%	£1.11
80%	£1.33
90%	£1.76
100%	£13.04

Source: *Student Analysis.*

Considering the Selling and distribution expenses, the breakeven is 56.46% and states the percentage in which a higher one it would mean a “reduce” recommendation.

	FCFF	FCFE	APV	RI	Market Price 31/03/2020
Equity Value	£1 276.81	£415.58	£2 146.56	£1 443.90	0
# Shares	1824.014	1824.014	1824.014	1824.014	0
Price/sh	£0.70	£0.23	£1.18	£0.79	£0.64
Upside potential	9.96%	-64.21%	84.86%	24.35%	0

Source: *Student Analysis.*

Table 11. Monte Carlo Simulation statistics

Statistics	Forecast values
Trials	100 000
Base Case	£0.84
Average	£1.01
Median	£0.84
Mode	-
Standard Deviation	£0.62
Variance	£0.39
Skewness	2.52
Kurtosis	14.35
Coeff. of Variation	0.6167
Minimum	£0.22
Maximum	£13.04
Mean Std. Error	£0.00

Source: *Student Analysis.*

Considering the Administrative and other expenses, the breakeven is 68.94% and states the percentage in which a higher one would mean a “reduce” recommendation.

	FCFF	FCFE	APV	RI	Market Price 31/03/2020
Equity Value	£1 276.80	£427.70	£2 150.50	£1 463.09	0
# Shares	1824.014	1824.014	1824.014	1824.014	0
Price/sh	£0.70	£0.23	£1.18	£0.80	£0.64
Upside potential	9.96%	-63.17%	85.20%	26.00%	0

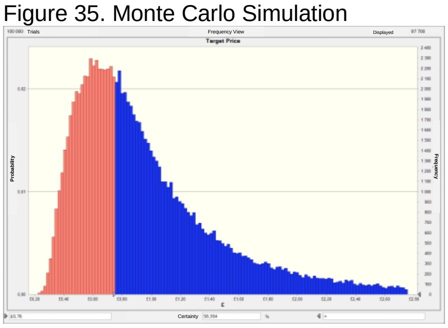
Source: *Student Analysis.*

After analyzing all these scenarios, it is possible to identify the danger that the company faces if it does not accomplish a good level of revenues and cost reduction. In the case of a lower result in one of these variables, the others must compensate for it.

Sensitivity Analysis and Monte Carlo Simulation

I performed a Monte Carlo simulation with the purpose of analyzing the sensitivity of the target price concerning the exchange rates, terminal growth rate, levered beta, and price to book ratio. The average TP was 1.01£/sh whereas the median was 0.84£/sh. The method supported the buy recommendation with a 58.35% certainty. The analysis exhibited that the model has a considerable sensitivity to the levered beta and the terminal growth rate, whereas the changes in price to book ratio and in the exchange, rates are almost insignificant to the target price. Additionally, the analysis supports the classification of the stock as high risk. Examining the image 35, there is a 35.21% likelihood of the target price falling below 0.70£/sh. However, on the upside, it is displayed that the stock may provide the investor with a high return.

Figure 35. Monte Carlo Simulation



Source: *Student Analysis.*

8. Investment Risks

Risks and Risk Matrix

The following section was developed to identify the possible risk that the company could face, the impact and probability of each one, and the possible measures that the company could implement to mitigate the risk. The risks mentioned below could impact the company value, which could imply a change in the investment decision. The risks were identified considering the information disclosed by AML.

Figure 36. Risk Matrix

Impact				
	High	S3 O2 C1 O4	F1	C2
	Medium	O3 F2	S1 O1 S4	
	Low	S2		F3
		Low	Medium	High
		Probability		

Source: *Student Analysis.*

Political and macro-economic uncertainty (S1)

Aston Martin Lagonda is highly exposed to legal, social, economic, and political developments, due to its activeness in a variety of markets. This may have an impact on profitability, demand, and sales. During recessions, luxury goods are also possible targets of higher taxes. Other factors, such as the imposition of trade barriers between countries, could harm sales volumes. To prevent this type of risk, AML may monitor closely the markets where operates and their geopolitical events. Doing so, the company can act in conformity with the risks.

Threat to competitive positioning (S2)
In the HLS sector, it is important that AML maintains its competitiveness to achieve its strategic growth' objectives. There are players with more financial resources than AML, that may invest in better technology and get better deals with suppliers, due to more buying power. To prevent this risk, AML, should continue delivering high luxury cars to the market, increase its product portfolio, improve the efficiencies, and make continuous improvement in the cars' performance, technology, quality, and design.

Damage to the brand image (S3)
The brand image is a crucial factor in the company´s performance. Any type of reputational/brand damage could lead to catastrophic financial impacts and a decrease in demand. A consumer of luxury cars is not only buying the car itself, but also the sense of prestige and the identity associated with the brand. Consumer loyalty could be affected due to the bad quality of the products, late deliveries, and if the product does not deliver the expected value. A recall to fix an eventual problem in a line may damage the brand image. AML should have an effective brand positioning and awareness, pay attention to the quality and the value delivered to the customer, and must act to guarantee brand licensees compliance.

Inability to implement technological advances (S4)
AML could face the risk of not fulfilling consumers' expectations, concerning technologies' upgrading. This is due to reliance on third parties' components and the availability of funds to invest in product development. The entity is recently suffering from liquidity issues, which makes it difficult to invest heavily in product development. In order to minimize this issue, it relies on third parties that are knowledgeable on technological developments and provide them to the company.

Incapacity to attract, develop and maintain industry top talent (O1)
To obtain top performance in all the company departments, there is a need to have in the structure top talents in their respective fields. Talent attraction, retention, and long-term career perspective are crucial capabilities to deal with the issue. Unsuccessful talent management endeavors may result in financial results worsened and a higher probability of quality and perceived value on HLS to decrease. The performance, operating results, and growth depend on the human resources that the company has. The recent financial performance could impact the benefits and remunerations, which could denote a loss of individuals.

Incapacity to deliver the major programs (O2)
The company could face reputational and financial damages and be unable to deliver the strategy implemented, due to the inability to finish the programs on schedule, within the budget, and with the right quality and technical specifications. So as to minimize this risk, the company monitors the programs promptly, has dedicated human resources and performs technical and quality audits.

Threat of cyber-attacks (O3)
Deficient protection against cyber-attacks may result in a loss of sensitive data. AML makes big investments in R&D, with the interest of differentiating its products and to innovate. If there is a loss of sensitive data, about a specific innovation, this can become a potential big loss for the company, which could impact operations and result in a financial and reputational loss. Concerning the prevention of this type of risk, the company should regularly perform independent risk assessments to validate its security and have a controlled environment.

Disruption in the supply chain (O4)
There are some inputs to production for which there is only one supplier. If the supplier fails to meet deadlines, quality standards, increases the costs, or even gets out of the business, the company will be affected and potentially will have a period without production, depending on the importance of the supplier. This could result in operational and financial issues, loss of sales, and late deliveries, which could imply reputational damage. With a through selection and constant monitoring of key suppliers, this type of risk is somehow minimized.

Noncompliance with laws and regulations (C1)
The company is subject to a variety of laws and regulations since they operate throughout the world. Failing to follow those laws and regulations can lead to severe monetary punishments and have a substantial impact on the business. Paying close attention to changes in laws and regulations throughout all jurisdictions is a step in the right direction to mitigate this risk.

Brexit (C2)
This risk is different from the others due to its uncertainty. The UK left the EU in January 2020, despite the transactions period ending in December 2020, until now there isn´t a future trade agreement. The Brexit could impact the company's financials, supply chain, and human resources. Concerning the mitigation of the risk, AML established a cross-functional experienced team to monitor the developments, prepared plans to mitigate risks that could affect the supply chain and sales network and is updated to industry best practices.

Liquidity issues and lack of financial stability to support planned growth and operations (F1)
The company has current liquidity issues, which could jeopardize the capital expenditures and sustain its operations. The company must appeal to equity capital since if it increases its leverage, it could be difficult to operate the business. Intending to mitigate this risk, AML conducted a strategic equity investment at the beginning of the year, as mentioned earlier. If this exhibit has a successful outcome, in terms of liquidity and financial stability, the company should take some measures as a regular review of financing options and constant monitoring of cash and working capital.

Impairments of capitalized development costs (F2)
This financial risk could reduce the company's intangible assets, which could impact the company's financing and funding. In any product that the company invests, it will exist capitalized costs, and its value is related to future product profitability. One way to mitigate this risk is to make regular reviews of the product sales, average price, margins, and to adopt the modular architecture platform application approach, which reduces the investment costs.

Exchange rates fluctuations (F3)
Exchange rate risk affects the company, which has sales in a variety of countries with different currencies. As the percentage of revenues in currencies other than the local one gets higher, the exposure to this type of risk increases as well. One way to mitigate this risk should be foreign exchange hedging strategies.

Appendices

Appendix 1: Statement of Financial Position (£ in millions)

	2018	2019	2020F	2021F	2022F	2023F	2024F	CAGR 19YE-24F
Assets								
Non-current assets								
Intangible assets	£1 071.70	£1 183.60	£1 201.08	£1 267.35	£1 358.78	£1 440.85	£1 514.52	5.05%
Property, plant and equipment	£313.00	£350.50	£343.93	£358.95	£384.20	£404.93	£421.97	3.78%
Right-of-use lease assets		£81.80	£68.61	£61.96	£58.72	£54.31	£49.34	-9.62%
Trade and other receivables	£1.80	£1.80	£1.80	£1.80	£1.80	£1.80	£1.80	0.00%
Other financial assets		£0.20	£0.06	£0.08	£0.08	£0.10	£0.13	-8.26%
Deferred tax asset	£32.10	£45.70	£33.71	£38.08	£43.24	£45.49	£54.21	3.48%
Total Non-current assets	£1 418.60	£1 663.60	£1 649.19	£1 728.22	£1 846.81	£1 947.49	£2 041.98	4.18%
Current assets								
Inventories	£165.30	£200.70	£155.87	£170.15	£179.13	£177.81	£184.77	-1.64%
Trade and other receivables	£240.80	£249.70	£143.53	£171.95	£179.81	£163.62	£155.30	-9.06%
Income tax receivable	£0.80	£0.30	£0.13	£0.21	£0.30	£0.37	£0.33	1.99%
Other financial assets	£0.10	£8.90	£0.31	£0.48	£0.58	£0.40	£0.52	-43.30%
Cash and cash equivalents	£144.60	£107.90	£574.25	£553.21	£302.68	£312.94	£422.21	31.37%
Total Current assets	£551.60	£567.50	£874.09	£896.00	£662.51	£655.16	£763.14	6.10%
Total assets	£1 970.20	£2 231.10	£2 523.28	£2 624.22	£2 509.32	£2 602.64	£2 805.11	4.69%
Liabilities								
Current liabilities								
Borrowings	£99.40	£114.80	£103.32	£92.99	£83.69	£75.32	£67.79	-10.00%
Trade and other payables	£671.00	£702.10	£404.71	£518.20	£586.55	£587.35	£627.30	-2.23%
Income tax payable	£4.90	£8.90	£2.45	£2.72	£3.12	£3.35	£3.46	-17.23%
Other financial liabilities	£4.20	£6.30	£7.75	£7.26	£4.74	£5.23	£5.80	-1.65%
Lease liabilities		£14.10	£14.10	£14.10	£14.10	£14.10	£14.10	0.00%
Provisions	£10.80	£12.00	£7.71	£7.68	£7.59	£7.37	£7.59	-8.75%
Total Current liabilities	£790.30	£858.20	£540.04	£642.95	£699.78	£692.73	£726.04	-3.29%
Non-current liabilities								
Borrowings	£604.70	£839.10	£839.10	£839.10	£621.30	£621.30	£621.30	-5.83%
Trade and other payables	£49.80	£9.40	£9.49	£11.39	£13.67	£13.85	£10.87	2.96%
Other financial liabilities	£4.40	£2.60	£3.28	£3.55	£2.20	£2.64	£2.67	0.50%
Lease liabilities		£97.30	£86.88	£81.84	£79.61	£75.90	£71.27	-6.04%
Provisions	£12.90	£16.20	£8.89	£8.63	£9.07	£8.87	£9.15	-10.80%
Employee benefits	£38.70	£36.80	£22.85	£30.57	£36.18	£37.93	£42.46	2.90%
Deferred tax liabilities	£20.00	£12.60	£12.60	£12.60	£12.60	£12.60	£12.60	0.00%
Total Non-current liabilities	£730.50	£1 014.00	£983.10	£987.68	£774.63	£773.10	£770.31	-5.35%
Total liabilities	£1 520.80	£1 872.20	£1 523.14	£1 630.63	£1 474.41	£1 465.83	£1 496.35	-4.38%
Net assets	£449.40	£358.90	£1 000.14	£993.59	£1 034.91	£1 136.81	£1 308.77	29.53%
Capital and reserves								
Share capital	£2.10	£2.10	£16.53	£16.53	£16.53	£16.53	£16.53	51.08%
Share premium	£352.30	£352.30	£1 025.87	£1 025.87	£1 025.87	£1 025.87	£1 025.87	23.83%
Capital reserve	£6.60	£6.60	£6.60	£6.60	£6.60	£6.60	£6.60	0.00%
Translation reserve	£2.30	-£0.40	£1.16	£1.59	£1.46	£1.44	£1.44	229.28%
Hedge reserve	-£23.50	-£2.30	-£3.01	-£4.82	-£6.85	-£8.62	-£6.54	-23.24%
Retained earnings	£99.40	-£13.50	-£61.12	-£66.27	-£22.80	£80.89	£250.76	279.38%
Equity attributable to owners of the group	£439.20	£344.80	£986.04	£979.49	£1 020.81	£1 122.71	£1 294.67	30.29%
Non-controlling interests	£10.20	£14.10	£14.10	£14.10	£14.10	£14.10	£14.10	0.00%
Total shareholders' equity	£449.40	£358.90	£1 000.14	£993.59	£1 034.91	£1 136.81	£1 308.77	29.53%

Source: *Aston Martin Lagonda Annual Report, adapted, student analysis.*

Appendix 2: Income Statement (£ in millions)

	2018	2019	2020F	2021F	2022F	2023F	2024F	CAGR 19YE-24F
Income Statement								
Revenue	£1 096.50	£997.30	£633.10	£846.88	£1 002.44	£1 050.85	£1 176.18	3.35%
Cost of sales	-£660.70	-£642.70	-£385.17	-£502.53	-£579.79	-£592.03	-£645.00	-0.07%
Gross profit	£435.80	£354.60	£247.93	£344.36	£422.65	£458.82	£531.18	8.42%
Selling and distribution expenses	-£89.80	-£95.00	-£48.00	-£62.65	-£72.32	-£73.88	-£80.54	3.25%
Administrative and other expenses	-£293.20	-£277.30	-£186.45	-£228.39	-£245.47	-£231.26	-£229.66	3.70%
Other (expense) income	£20.00	-£19.00	£0.00	£0.00	£0.00	£0.00	£0.00	100.00%
Operating profit/(loss)	£72.80	-£36.70	£13.49	£53.31	£104.85	£153.68	£220.99	243.20%
Finance income	£4.20	£16.30	£8.77	£13.38	£18.14	£14.28	£18.27	2.31%
Finance expense	-£145.20	-£83.90	-£73.80	-£72.27	-£75.95	-£55.74	-£55.43	7.96%
(Loss)/profit before tax	-£68.20	-£104.30	-£51.53	-£5.57	£47.05	£112.22	£183.84	212.00%
Income tax credit/(charge)	£11.10	-£0.10	£3.92	£0.42	-£3.57	-£8.53	-£13.97	-168.55%
(Loss)/profit for the year	-£57.10	-£104.40	-£47.62	-£5.15	£43.47	£103.69	£169.87	210.23%
(Loss)/profit attributable to:	-£57.10	-£104.40	-£47.62	-£5.15	£43.47	£103.69	£169.87	210.23%
Owners of the group	-£62.70	-£113.20	-£51.63	-£5.59	£39.81	£94.95	£155.55	206.56%
Non-controlling interests	£5.60	£8.80	£4.01	£0.43	£3.66	£8.74	£14.32	10.23%
Other comprehensive income								
Items that will never be reclassified to the Income Statement								
Remeasurement of defined benefit liability	£5.40	-£1.40	£1.43	£1.91	£2.26	£2.37	£2.65	213.60%
Taxation on items that will never be reclassified to the Income Statement	-£0.90	£0.20	£1.93	£2.63	£0.76	£0.98	£1.28	45.07%
Items that are or may be reclassified to the Income Statement								
Foreign exchange translation differences	£0.70	-£2.70	-£4.92	£3.48	-£0.38	-£3.98	-£5.89	16.88%
Fair value adjustment – cash flow hedges	-£30.50	£9.00	-£2.38	-£3.82	-£5.43	-£6.82	-£2.62	-178.15%
Amounts reclassified to the Income Statement – cash flow hedges	£3.50	£15.60	£5.96	£7.98	£9.44	£9.90	£12.54	-4.27%
Taxation on items that may be reclassified to the Income Statement	£3.50	-£3.40	-£0.03	-£0.04	-£0.06	-£0.08	-£0.86	24.09%
Other comprehensive income for the period, net of income tax	-£18.30	£17.30	£1.99	£12.12	£6.59	£2.36	£7.11	-16.30%
Total comprehensive income for the period	-£75.40	-£87.10	-£45.63	£6.97	£50.06	£106.05	£176.97	215.23%
Total comprehensive income for the period	-£75.40	-£87.10	-£45.63	£6.97	£50.06	£106.05	£176.97	215.23%
Owners of the group	-£81.00	-£95.90	-£49.64	£6.54	£46.40	£97.31	£162.66	211.15%
Non-controlling interests	£5.60	£8.80	£4.01	£0.43	£3.66	£8.74	£14.32	10.23%

Source: *Aston Martin Lagonda Annual Report, adapted, student analysis.*

Appendix 3: Cash Flow Statement (£ in millions)

	2020F	2021F	2022F	2023F	2024F	CAGR 20F-24F
Operating activities						
(Loss)/profit for the year	-£47.62	-£5.15	£43.47	£103.69	£169.87	228.96%
Depreciation and impairment of property, plant and equipment	£62.57	£61.40	£64.08	£68.59	£72.29	2.93%
Depreciation and impairment of right-of-use lease assets	£13.19	£11.06	£9.99	£9.47	£8.76	-7.86%
Amortization and impairment of intangible assets	£121.17	£122.96	£129.75	£139.11	£147.51	4.01%
Increase in inventories	£44.83	-£14.28	-£8.98	£1.32	-£6.96	-168.90%
Increase in trade and other receivables	£106.17	-£28.42	-£7.86	£16.19	£8.32	-39.91%
(Decrease)/Increase in trade and other payables	-£297.39	£113.49	£68.35	£0.81	£39.95	166.93%
Income tax receivable	£0.17	-£0.08	-£0.09	-£0.08	£0.04	-23.92%
Income tax payable	-£6.45	£0.27	£0.40	£0.24	£0.10	143.86%
Movement in provisions	-£4.29	-£0.04	-£0.09	-£0.22	£0.23	155.52%
Other financial assets	£8.59	-£0.17	-£0.11	£0.18	-£0.12	-142.36%
Other financial liabilities	£1.45	-£0.49	-£2.53	£0.50	£0.56	-17.25%
Cash generated from operations	£2.40	£260.55	£296.38	£339.78	£440.54	183.67%
Net cash inflow from operating activities	£2.40	£260.55	£296.38	£339.78	£440.54	183.67%
Cash flows from investing activities						
Payments to acquire property, plant and equipment	-£56.00	-£76.42	-£89.32	-£89.32	-£89.32	-9.79%
Payments to acquire intangible assets	-£138.65	-£189.23	-£221.18	-£221.18	-£221.18	-9.79%
Trade and other receivables	£0.00	£0.00	£0.00	£0.00	£0.00	n.a.
Other financial assets	£0.14	-£0.02	£0.00	-£0.02	-£0.03	-174.97%
Deferred tax asset	£11.99	-£4.37	-£5.16	-£2.25	-£8.72	-193.84%
Increase in Right-of-use lease assets	£0.00	-£4.41	-£6.75	-£5.06	-£3.79	n.a.
Net cash used in investing activities	-£182.52	-£274.45	-£322.41	-£317.83	-£323.04	-12.10%
Cash flows from financing activities						
Proceeds from equity share issue	£688.00	£0.00	£0.00	£0.00	£0.00	-100.00%
Principal element of lease payments	-£10.42	-£9.45	-£8.98	-£8.77	-£8.42	4.18%
Adictions to Lease Leabilities	£0.00	£4.41	£6.75	£5.06	£3.79	n.a.
Repayment of existing borrowings	-£11.48	-£10.33	-£727.10	-£8.37	-£7.53	8.08%
New borrowings	£0.00	£0.00	£500.00	£0.00	£0.00	n.a.
Changes in Equity	£0.86	-£1.40	-£2.15	-£1.79	£2.09	19.47%
Trade and other payables	£0.09	£1.90	£2.28	£0.19	-£2.98	-300.69%
Other financial liabilities	£0.68	£0.26	-£1.34	£0.44	£0.02	-50.25%
Provisions	-£7.31	-£0.26	£0.43	-£0.20	£0.28	152.21%
Employee benefits	-£13.95	£7.72	£5.62	£1.75	£4.52	179.84%
Deferred tax liabilities	£0.00	£0.00	£0.00	£0.00	£0.00	n.a.
Net cash inflow from financing activities	£646.48	-£7.15	-£224.50	-£11.69	-£8.23	-141.78%
Net (decrease)/increase in cash and cash	£466.35	-£21.04	-£250.53	£10.26	£109.27	-25.19%
Cash and cash equivalents at the beginning of the year	£107.90	£574.25	£553.21	£302.68	£312.94	23.73%
Cash and cash equivalents at the end of the year	£574.25	£553.21	£302.68	£312.94	£422.21	-5.97%

Source: *Aston Martin Lagonda Annual Report, adapted, student analysis.*

Appendix 4: Key Financial Ratios

Key Financial Ratios	2019	2020F	2021F	2022F	2023F	2024F
Liquidity Ratios						
Current Ratio	0.66	1.62	1.39	0.95	0.95	1.05
Quick Ratio	0.42	1.33	1.13	0.69	0.69	0.80
Cash Ratio	0.13	1.06	0.86	0.43	0.45	0.58
Efficiency Ratios						
Total Assets Turnover	0.47	0.27	0.33	0.39	0.41	0.43
Accounts Receivables Turnover	4.07	3.22	5.37	5.70	6.12	7.38
Collection Period (days)	91.39	82.75	74.11	65.47	56.83	48.19
Inventory Turnover	5.45	3.55	5.20	5.74	5.89	6.49
Days in Inventory (days)	103.93	168.95	118.40	109.94	110.03	102.59
Payables Turnover	0.94	0.70	1.09	1.05	1.01	1.06
Payables Period (days)	347.39	341.02	334.66	328.30	321.94	315.58
Operating Cycle (days)	195.32	251.70	192.51	175.42	166.87	150.79
Cash Cycle (days)	-152.07	-89.33	-142.15	-152.89	-155.07	-164.79
Fixed Assets Turnover	3.01	1.82	2.41	2.70	2.66	2.84
Profitability Ratios						
Gross Profit Margin	35.56%	39.16%	40.66%	42.16%	43.66%	45.16%
EBITDA Margin	12.81%	33.24%	29.37%	30.79%	35.29%	38.22%
EBIT Margin	-3.68%	2.13%	6.30%	10.46%	14.62%	18.79%
Net Profit Margin	-10.47%	-7.52%	-0.61%	4.34%	9.87%	14.44%
ROA	-4.68%	-1.89%	-0.20%	1.73%	3.98%	6.06%
ROCE	-2.67%	0.68%	2.69%	5.79%	8.05%	10.63%
ROE	-29.09%	-4.76%	-0.52%	4.20%	9.12%	12.98%
EPS	-	-0.03	0.00	0.02	0.06	0.09
SG&A/Sale	37.33%	37.03%	34.37%	31.70%	29.04%	26.37%
Solvency Ratios						
Long- and short-term Debt Ratio	42.75%	37.35%	35.52%	28.09%	26.77%	24.57%
Long-term Debt Ratio	37.61%	33.25%	31.98%	24.76%	23.87%	22.15%
Debt to Equity Ratio	2.66	0.94	0.94	0.68	0.61	0.53
Equity Multiplier	6.22	2.52	2.64	2.42	2.29	2.14
Debt to EBITDA	7.46	4.48	3.75	2.28	1.88	1.53
Interest Coverage Ratio	0.71	0.18	0.74	1.46	2.76	3.99
Value Creation and Cash Flow Ratios						
Economic Value Added (EVA)	-	-124.20	-92.73	-40.96	-10.33	30.92
Debt Coverage	-0.04	0.01	0.06	0.15	0.22	0.32
Cash to Income	-0.53	0.18	4.89	2.83	2.21	1.99
Earnings Quality: CFO/(NP+D&A+ΔNWC)	0.28	0.01	2.18	1.52	1.12	1.23

Source: *Student analysis.*

Appendix 5: Common-Size Statement of Financial Position

	2018	2019	2020F	2021F	2022F	2023F	2024F
Assets							
Non-current assets							
Intangible assets	54%	53%	48%	48%	54%	55%	54%
Property, plant and equipment	16%	16%	14%	14%	15%	16%	15%
Right-of-use lease assets		4%	3%	2%	2%	2%	2%
Trade and other receivables	0%	0%	0%	0%	0%	0%	0%
Other financial assets		0%	0%	0%	0%	0%	0%
Deferred tax asset	2%	2%	1%	1%	2%	2%	2%
Total Non-current assets	72%	75%	65%	66%	74%	75%	73%
Current assets							
Inventories	8%	9%	6%	6%	7%	7%	7%
Trade and other receivables	12%	11%	6%	7%	7%	6%	6%
Income tax receivable	0%	0%	0%	0%	0%	0%	0%
Other financial assets	0%	0%	0%	0%	0%	0%	0%
Cash and cash equivalents	7%	5%	23%	21%	12%	12%	15%
Total Current assets	28%	25%	35%	34%	26%	25%	27%
Total assets	100%	100%	100%	100%	100%	100%	100%
Liabilities							
Current liabilities							
Borrowings	5%	5%	4%	4%	3%	3%	2%
Trade and other payables	34%	31%	16%	20%	23%	23%	22%
Income tax payable	0%	0%	0%	0%	0%	0%	0%
Other financial liabilities	0%	0%	0%	0%	0%	0%	0%
Lease liabilities		1%	1%	1%	1%	1%	1%
Provisions	1%	1%	0%	0%	0%	0%	0%
Total Current liabilities	40%	38%	21%	25%	28%	27%	26%
Non-current liabilities							
Borrowings	31%	38%	33%	32%	25%	24%	22%
Trade and other payables	3%	0%	0%	0%	1%	1%	0%
Other financial liabilities	0%	0%	0%	0%	0%	0%	0%
Lease liabilities		4%	3%	3%	3%	3%	3%
Provisions	1%	1%	0%	0%	0%	0%	0%
Employee benefits	2%	2%	1%	1%	1%	1%	2%
Deferred tax liabilities	1%	1%	0%	0%	1%	0%	0%
Total Non-current liabilities	37%	45%	39%	38%	31%	30%	27%
Total liabilities	77%	84%	60%	62%	59%	56%	53%
Net assets	23%	16%	40%	38%	41%	44%	47%
Capital and reserves							
Share capital	0%	0%	1%	1%	1%	1%	1%
Share premium	18%	16%	41%	39%	41%	39%	37%
Capital reserve	0%	0%	0%	0%	0%	0%	0%
Translation reserve	0%	0%	0%	0%	0%	0%	0%
Hedge reserve	-1%	0%	0%	0%	0%	0%	0%
Retained earnings	5%	-1%	-2%	-3%	-1%	3%	9%
Equity attributable to owners of the group	22%	15%	39%	37%	41%	43%	46%
Non-controlling interests	1%	1%	1%	1%	1%	1%	1%
Total shareholders' equity	23%	16%	40%	38%	41%	44%	47%

Source: *Student analysis.*

Appendix 6: Common-Size Income Statement

	2018	2019	2020F	2021F	2022F	2023F	2024F
Income Statement							
Revenue	100%	100%	100%	100%	100%	100%	100%
Cost of sales	-60%	-64%	-61%	-59%	-58%	-56%	-55%
Gross profit	40%	36%	39%	41%	42%	44%	45%
Selling and distribution expenses	-8%	-10%	-8%	-7%	-7%	-7%	-7%
Administrative and other expenses	-27%	-28%	-29%	-27%	-24%	-22%	-20%
Other (expense) income	2%	-2%	0%	0%	0%	0%	0%
Operating profit/(loss)	7%	-4%	2%	6%	10%	15%	19%
Finance income	0%	2%	1%	2%	2%	1%	2%
Finance expense	-13%	-8%	-12%	-9%	-8%	-5%	-5%
(Loss)/profit before tax	-6%	-10%	-8%	-1%	5%	11%	16%
Income tax credit/(charge)	1%	0%	1%	0%	0%	-1%	-1%
(Loss)/profit for the year	-5%	-10%	-8%	-1%	4%	10%	14%
(Loss)/profit attributable to:	-5%	-10%	-8%	-1%	4%	10%	14%
Owners of the group	-6%	-11%	-8%	-1%	4%	9%	13%
Non-controlling interests	1%	1%	1%	0%	0%	1%	1%
Other comprehensive income							
Items that will never be reclassified to the Income Statement							
Remeasurement of defined benefit liability	0%	0%	0%	0%	0%	0%	0%
Taxation on items that will never be reclassified to the Income Statement	0%	0%	0%	0%	0%	0%	0%
Items that are or may be reclassified to the Income Statement							
Foreign exchange translation differences	0%	0%	-1%	0%	0%	0%	-1%
Fair value adjustment – cash flow hedges	-3%	1%	0%	0%	-1%	-1%	0%
Amounts reclassified to the Income Statement – cash flow hedges	0%	2%	1%	1%	1%	1%	1%
Taxation on items that may be reclassified to the Income Statement	0%	0%	0%	0%	0%	0%	0%
Other comprehensive income for the period, net of income tax	-2%	2%	0%	1%	1%	0%	1%
Total comprehensive income for the period	-7%	-9%	-7%	1%	5%	10%	15%
Total comprehensive income for the period	-7%	-9%	-7%	1%	5%	10%	15%
Owners of the group	-7%	-10%	-8%	1%	5%	9%	14%
Non-controlling interests	1%	1%	1%	0%	0%	1%	1%

Source: *Student analysis.*

Appendix 7: Common-Size Cash Flow Statement

	2020F	2021F	2022F	2023F	2024F
Operating activities					
(Loss)/profit for the year	-1985%	-2%	15%	31%	39%
Depreciation and impairment of property, plant and equipment	2609%	24%	22%	20%	16%
Depreciation and impairment of right-of-use lease	550%	4%	3%	3%	2%
Amortization and impairment of intangible assets	5052%	47%	44%	41%	33%
Increase in inventories	1869%	-5%	-3%	0%	-2%
Increase in trade and other receivables	4427%	-11%	-3%	5%	2%
(Decrease)/Increase in trade and other payables	-12399%	44%	23%	0%	9%
Income tax receivable	7%	0%	0%	0%	0%
Income tax payable	-269%	0%	0%	0%	0%
Movement in provisions	-179%	0%	0%	0%	0%
Other financial assets	358%	0%	0%	0%	0%
Other financial liabilities	60%	0%	-1%	0%	0%
Cash generated from operations	100%	100%	100%	100%	100%
Net cash inflow from operating activities	100%	100%	100%	100%	100%
Cash flows from investing activities					
Payments to acquire property, plant and equipment	-2335%	-29%	-30%	-26%	-20%
Payments to acquire intangible assets	-5781%	-73%	-75%	-65%	-50%
Trade and other receivables	0%	0%	0%	0%	0%
Other financial assets	6%	0%	0%	0%	0%
Deferred tax asset	500%	-2%	-2%	-1%	-2%
Increase in Right-of-use lease assets	0%	-2%	-2%	-1%	-1%
Net cash used in investing activities	-7610%	-105%	-109%	-94%	-73%
Cash flows from financing activities					
Proceeds from equity share issue	28686%	0%	0%	0%	0%
Principal element of lease payments	-435%	-4%	-3%	-3%	-2%
Adictions to Lease Leabilities	0%	2%	2%	1%	1%
Repayment of existing borrowings	-479%	-4%	-245%	-2%	-2%
New borrowings	0%	0%	169%	0%	0%
Changes in Equity	36%	-1%	-1%	-1%	0%
Trade and other payables	4%	1%	1%	0%	-1%
Other financial liabilities	28%	0%	0%	0%	0%
Provisions	-305%	0%	0%	0%	0%
Employee benefits	-582%	3%	2%	1%	1%
Deferred tax liabilities	0%	0%	0%	0%	0%
Net cash inflow from financing activities	26954%	-3%	-76%	-3%	-2%
Net (decrease)/increase in cash and cash	19444%	-8%	-85%	3%	25%
Cash and cash equivalents at the beginning of the year	4499%	220%	187%	89%	71%
Cash and cash equivalents at the end of the year	23943%	212%	102%	92%	96%

Source: *Student analysis.*

Appendix 8: Forecasting Assumptions

	Notes	2020F	2021F	2022F	2023F	2024F	Assumption
Statement of Financial Position							
Non-current assets							
Intangible assets	% Total CAPEX	71.23%	71.23%	71.23%	71.23%	71.23%	Contains capitalized development costs, goodwill, brands, technology, dealer network, software and other. Intangible Assets in t = Intangible Assets in t-1 + Investment in Intangibles in t - Amortization in t. Investment in Intangibles in t represents 71.23% of Total CAPEX. Appendix 16.
Property, plant and equipment	% Total CAPEX	28.77%	28.77%	28.77%	28.77%	28.77%	PP&E in t = PP&E in t-1 + Investment in PP&E - Depreciation in t. Investment in PP&E in t represents 28.77% of Total CAPEX. Appendix 16.
Right-of-use lease assets							Introduced on adoption of IFRS 16 at 1 January 2019, contains properties, IT equipment, plant and machinery. Each one of them may have additions, modifications, suffer from the movements in exchange rates, transfers from tangible fixed assets, depreciations and impairments. The total value was assumed to be: Right-of-use lease assets t = Right-of-use lease assets t-1 - Depreciation and impairment of right-of-use lease assets t-1 + addictions to lease liabilities.
Trade and other receivables	Values	£1.80	£1.80	£1.80	£1.80	£1.80	Contains trade receivables with maturities higher than 1 year. The rubric has decreasing trend, which had stable in £1,8M in the last two years. The value is not expected to increase. The total value was assumed to be constant over the forecasted years.
Other financial assets	% Revenues	0.01%	0.01%	0.01%	0.01%	0.01%	Contains forward currency contracts held at fair values (used to mitigate the risk associated with exchange rates fluctuations). The total value was assumed to fluctuate in proportion of the sales, following a moving average of 5 years, using historical data.
Deferred tax asset	% Revenues	5.33%	4.50%	4.31%	4.33%	4.61%	The total value was assumed to fluctuate in proportion of the sales, following a moving average of 5 years, using historical data.
Current assets							
Inventories	Parts for resale, Work in progress Δ Finished vehicles	0.63 0.63 92.00%	1.34 1.34 92.00%	1.18 1.18 92.00%	1.05 1.05 92.00%	1.12 1.12 92.00%	Appendix 14.
Trade and other receivables	Days	82.75	74.11	65.47	56.83	48.19	Contains prepayments, trade and other receivables with maturities lower than 1 year. The total value was computed considering the Collection Period, in days. Assuming a more efficient operational management it was estimated a decrease in the number of days, in each year, with the objective of reaching the 2017 YE number of days.
Income tax receivable	% Revenues	0.02%	0.02%	0.03%	0.04%	0.03%	The total value was assumed to fluctuate in proportion of the sales, following a moving average of 5 years, using historical data.
Other financial assets	% Revenues	0.05%	0.06%	0.06%	0.04%	0.04%	Contains forward currency contracts held at fair values (used to mitigate the risk associated with exchange rates fluctuations) and cash held not available for short-term use. The last component is responsible for higher rubric increasing in 2019 (over £8M) compared to the previous years. This is explained by the frozen of AML´s account in some local bank due to local arbitration proceedings. It is assumed that the amount will be available in 2020. The total value was assumed to be fluctuate in proportion of the sales, following a moving average of 5 years, using historical data, without considering the frozen value.

Source: *Student analysis.*

	Notes	2020F	2021F	2022F	2023F	2024F	Assumption
Current liabilities							
Borrowings	Repayments	10.00%	10.00%	10.00%	10.00%	10.00%	Contains bank loans and overdrafts. The board is committed in improving liquidity and deleverage the entity. It is expected the decrease of the current borrowings total value in 10% YoY.
Trade and other payables	Days	341.02	334.66	328.30	321.94	315.58	Contains trade payments, customer deposits and advances, deferred income (service packages), accruals and other payables, with maturities lower than 1 year. The total value was computed considering the Payables Period, in days. Assuming a more efficient operational management it was estimated a decrease in the number of days, in each year, with the objective of reaching the 2017 YE number of days.
Income tax payable	% Revenues	0.39%	0.43%	0.49%	0.53%	0.55%	The total value was assumed to fluctuate in proportion of the sales, following a moving average of 5 years, using historical data.
Other financial liabilities	% Revenues	1.22%	1.15%	0.75%	0.83%	0.92%	Contains forward currency contracts held at fair value, which was assumed to fluctuate in proportion of the sales, following a moving average of 5 years, using historical data.
Lease liabilities (current)	Constant Increase	0.00%	0.00%	0.00%	0.00%	0.00%	Assumed to be equal to 2019 Value.
Provisions	% Revenues	1.22%	1.21%	1.20%	1.16%	1.20%	Contains provisions related with the Group´s warranty scheme. The total value was assumed to fluctuate in proportion of the sales, following a moving average of 5 years, using historical data.
Non-current liabilities							
Borrowings	Repayments	£0.00	£0.00	£717.80	£0.00	£0.00	Contains senior secured notes and bank loans. The board is committed in improving liquidity and deleverage the entity. Taking that in consideration and that the company raised capital trough a shares issue, its is assumed that the borrowings will be constant over time, and will have a decrease of £137,2 in 2022 due to the maturities of a senior secured note. Additionally, in 2022 other two senior secured note will mature with a value of £580,6M, however I will assumed that the company will borrow £500M. The transaction costs will be the same as in 2019.
	New Borrowings	£0.00	£0.00	£500.00	£0.00	£0.00	
Trade and other payables	% Revenues	1.50%	1.80%	2.16%	2.19%	1.72%	Contains deferred income (service packages). The total value was assumed to fluctuate in proportion of the sales, following a moving average of 5 years, using historical data.
Other financial liabilities	% Revenues	0.52%	0.56%	0.35%	0.42%	0.42%	Contains forward currency contracts held at fair value, which was assumed to fluctuate in proportion of the sales, following a moving average of 5 years, using historical data.
Lease liabilities (non current)	Addiction	£0.00	£4.41	£6.75	£5.06	£3.79	See Appendix 15.
	Repayment of principal	-£10.42	-£9.45	-£8.98	-£8.77	-£8.42	
	Principal Repayment Rate (%)	9.36%	9.36%	9.36%	9.36%	9.36%	
Provisions	% Revenues	1.40%	1.36%	1.43%	1.40%	1.45%	Contains provisions related with the Group´s warranty scheme. The total value was assumed to fluctuate in proportion of the sales, following a moving average of 5 years, using historical data.
Employee benefits	% Revenues	3.61%	3.61%	3.61%	3.61%	3.61%	The total value was assumed to be the historical median between 2014-2019 in proportion of the sales.
Deferred tax liabilities	Constant	0.00%	0.00%	0.00%	0.00%	0.00%	Equal to the 2019 nominal value.

Source: *Student analysis.*

	Notes	2020F	2021F	2022F	2023F	2024F	Assumption
Capital and reserves							
Share capital		£14.43	£0.00	£0.00	£0.00	£0.00	The company has issued 1.292.011.560 ordinary shares, raising the capital in £536M in March 2020. The share capital increased £11.679.784,50 and the share premium increased £524.320.216,50. The total value in 2020 Share Capital is £13,74M. In June 2020, the company issued more 304M shares, increasing the share capital in £2,748,065 and the share premium in £149,251,935. The total amount raised was £152M. After these two capital injections it is not expected a new share issue.
Share premium		£673.57	£0.00	£0.00	£0.00	£0.00	
Capital reserve	Constant	£0.00	£0.00	£0.00	£0.00	£0.00	Equal to 2019 nominal value.
Translation reserve	% Revenues	0.18%	0.19%	0.15%	0.14%	0.12%	The total value was assumed to fluctuate in proportion of the sales, following a moving average of 5 years, using historical data.
Hedge reserve	% Revenues	-0.47%	-0.57%	-0.68%	-0.82%	-0.56%	The total value was assumed to fluctuate in proportion of the sales, following a moving average of 5 years, using historical data.
Retained earnings							Retained earnings in t = Retained earnings in t-1 + Net income in t - Dividends paid in t.
Non-controlling interests	% Revenues	0.99%	1.01%	1.04%	1.08%	1.11%	The total value was assumed to fluctuate in proportion of the sales, following a moving average of 5 years, using historical data.

Source: *Student analysis.*

	Notes	2020F	2021F	2022F	2023F	2024F	Assumption
Statement of Comprehensive Income							
Revenue	YoY	63.48%	137.61%	115.00%	107.25%	106.97%	Appendix 13.
Cost of sales	% Revenues	-60.84%	-59.34%	-57.84%	-56.34%	-54.84%	The total value was assumed to be the 5 year historical average, in proportion of the sales. Additionally, a discount factor of 1.5% was applied since the company is stabilizing the production to luxury values, which will increase the price and increase the margin, since it is expected that the company will sell two specials per year (cars with higher margin). It expected that the company will try to reach the gross margin obtained in 2017 and reach the margins of its pears.
Selling and distribution expenses	% Revenues	-7.58%	-7.40%	-7.21%	-7.03%	-6.85%	The company is trying to reduce cost, increase productivity, efficiencies and profitability. Additionally, in 2020 the company will make a downsize in the workforce. It is expected that the company may get the ratios (expenses over sales) equal to 2017 (the only year that the company had positive earnings). Considering this, in 2020 the company would have the five year historical average of each one of this two general expenses. In 2021 and forward the company will deduct 0.18% in Selling and distribution expenses over revenues ratio and deduct 2.48% in the administrative and other expenses over revenues ratio. With this reductions AML will reach the 2017´s ratios in 2024.
Administrative and other expenses	% Revenues	-29.45%	-26.97%	-24.49%	-22.01%	-19.53%	
Other (expense) income							Contains sale of intellectual property and Loss allowance recognized in relation to the sale. This rubric will be considers as 0, since it is not expected a new sale of intellectual property over the next five years.
Finance income	% Revenues	1.39%	1.58%	1.81%	1.36%	1.55%	Contains foreign exchange gain on borrowings not designated as part of a hedging relationship, bank deposit and other interest income. The total value was assumed to fluctuate in proportion of the sales, following a moving average of 5 years, using historical data. Additionally, it was assumed that after 2019, all the finance income is interest bearing.
Finance expense		-£73.80	-£72.27	-£75.95	-£55.74	-£55.43	The total finance expense value is assumed to be equal to the interest paid. In 2022, the value increases £4.1M due to transaction fees on new long term borrowings.
Income tax credit/(charge)	Effective tax rate (YoY)	7.60%	7.60%	7.60%	7.60%	7.60%	The final value of the income tax depends on the UK corporate tax rate (19%, but will be 17% starting in 2020), overseas tax and adjustments related with deferred tax. The effective tax rate will be computed by the UK Corporate tax minus an adjustment that includes the overseas tax and the adjustments due to deferred tax. More information in Appendix 17.
	UK Corporate Tax	17.00%	17.00%	17.00%	17.00%	17.00%	Source: AML 2019 Annual Report.
	Adjustment rate	9.40%	9.40%	9.40%	9.40%	9.40%	Computed as % of the (Loss)/profit before tax, using the historical median (2014-2019). More information in Appendix 17.
Non-controlling interests	% (Loss)/profit	8.43%	8.43%	8.43%	8.43%	8.43%	The total value was assumed to equal to Non-controlling interests/(Loss)/profit ratio of 2019YE.

Source: *Student analysis.*

	Notes	2020F	2021F	2022F	2023F	2024F	Assumption
Other comprehensive income							
Remeasurement of defined benefit liability	% Employee benefits	6.24%	6.24%	6.24%	6.24%	6.24%	The total value was assumed to be the historical median between 2014-2019 in proportion of the Employee benefits.
Taxation on items that will never be reclassified to the Income Statement	% Revenues	0.30%	0.42%	0.12%	0.16%	0.20%	The total value was assumed to fluctuate in proportion of the sales, following a moving average of 5 years, using historical data.
Foreign exchange translation differences	Values	-£4.92	£3.48	-£0.38	-£3.98	-£5.89	See Appendix 28.
Fair value adjustment – cash flow hedges	% Revenues	-0.38%	-0.45%	-0.54%	-0.65%	-0.22%	The total value was assumed to fluctuate in proportion of the sales, following a moving average of 5 years, using historical data.
Amounts reclassified to the Income Statement – cash flow hedges	% Revenues	0.94%	0.94%	0.94%	0.94%	1.07%	The total value was assumed to fluctuate in proportion of the sales, following a moving average, using historical data beginning in 2018YE.
Taxation on items that may be reclassified to the Income Statement	% Revenues	0.00%	-0.01%	-0.01%	-0.01%	-0.07%	The total value was assumed to fluctuate in proportion of the sales, following a moving average of 5 years, using historical data.
Other Parameters							
Number of shares (M)	Number	1824	1824	1824	1824	1824	Source: London Stock Exchange (1 June 2020)
Wacc rate		6.83%	6.91%	7.07%	7.22%	7.34%	Appendix 20.
Total Capex	% Revenues	30.75%	31.37%	30.97%	29.55%	26.40%	Total CAPEX is estimated following a moving average rate of five years (historical data), aligned with the sales, through the CAPEX/Sales ratio. Additionally, it was assumed a maximum value of £310.50M (equal to 2018YE and higher historical value). Appendix 16.
Depreciation and impairment of property, plant and equipment		17.85%	17.85%	17.85%	17.85%	17.85%	Average of Depreciation and Impairment Rate (2015-19).
Amortization and impairment of intangible assets		10.24%	10.24%	10.24%	10.24%	10.24%	Average of Amortization and Impairment Rate (2015-19).
Depreciation and impairment of right-of-use lease assets		16%	16%	16%	16%	16%	Equal to the Depreciation and Impairment Rate of 2019.
Beta Levered		1.28	1.28	1.28	1.28	1.28	Appendix 18.
Terminal Growth Rate FCFF						1.67%	Appendix 21.
Terminal Growth Rate FCFE						0.69%	Appendix 21.
Price to Book		3.38	3.38	3.38	3.38	3.38	Appendix 18.
Cost of debt Lease		3.95%	3.95%	3.95%	3.95%	3.95%	Appendix 19.
Cost of debt borrowings		7.28%	7.25%	7.30%	7.38%	7.45%	Appendix 19.
Total Cost of Debt		6.93%	6.93%	6.99%	6.98%	7.05%	Appendix 19.

Source: *Student analysis.*

Rate	2019	2020F	2021F	2022F	2023F	2024F
Euro	1.18	1.079	1.131	1.123	1.072	1.021
US Dollar	1.33	1.272	1.316	1.223	1.311	1.217
Yuan	9.23	9.188	9.521	9.455	9.749	9.31

Source: *Longforecast, adapted.*

Appendix 9: Business and Corporate Structure

Subsidiary undertakings	Holding	Proportion of voting rights and shares held	Nature of Business
Aston Martin Holdings (UK) Limited*	Ordinary	100%	Dormant company
Aston Martin Capital Holdings Limited** ◊	Ordinary	100%	Financing company holding the Senior Secured Notes
Aston Martin Investments Limited**	Ordinary	100%	Holding company
Aston Martin Capital Limited** ◊	Ordinary	100%	Dormant company – formerly the financing company that held the previous Senior Secured Notes that were repaid in 2017
Aston Martin Lagonda Group Limited**	Ordinary	100%	Holding company
Aston Martin Lagonda of North America Incorporated** ^	Ordinary	100%	Luxury sports car distributor
Lagonda Properties Limited**	Ordinary	100%	Dormant company
Aston Martin Lagonda Pension Trustees Limited**	Ordinary	100%	Trustee of the Aston Martin Lagonda Limited Pension Scheme
Aston Martin Lagonda Limited**	Ordinary	100%	Manufacture and sale of luxury sports cars, the sale of parts and motorsport activities
AM Brands Limited**◊	Ordinary	100%	Grants licences to third parties for the use of the Aston Martin brand for products worldwide
Aston Martin Lagonda of Europe GmbH** >	Ordinary	100%	Provision of engineering and sales and marketing services
AML Overseas Services Limited**	Ordinary	100%	Dormant company
Aston Martin Italy S.r.l** <	Ordinary	100%	Dormant company
Aston Martin Lagonda (China) Automobile Distribution Co., Ltd** √	Ordinary	100%	Luxury sports car distributor
AM Nurburgring Racing Limited**	Ordinary	100%	Dormant company
Aston Martin Japan GK** <<	Ordinary	100%	Operator of the sales office in Japan and certain other countries in the Asia Pacific region
Aston Martin Lagonda – Asia Pacific PTE Limited** >>	Ordinary	100%	Operator of the sales office in Singapore and certain other countries in the Asia Pacific region
AMWS Limited** ◊	Ordinary	50%***	Holding company
Aston Martin Works Limited**	Ordinary	50%***	Sale, servicing and restoration of Aston Martin cars, and manufacture of Continuation vehicles.

Source: *Aston Martin Lagonda Annual Report.*

Appendix 10: Porter's Five Forces HLS

Competitive Rivalry: Medium

- Few competitors
- High market growth
- Products highly differentiated
- High exit barriers

Threat of New Entrants: Low

- Limited economies of scale
- High capital requirements
- Heavy government regulations
- High brand recognition

Threat of Substitutes: Low

- Few substitutes

Bargain Power of Suppliers: Medium

- Few suppliers

Bargain Power of Buyers: Medium

- High product differentiation
- HNWIs

Source: *Student analysis.*

Appendix 11: Peers Comparison

	AML	Ferrari
Revenues (M)	£997	£3 435
SG&A as % Sales	35.15%	27.80%
Gross Margin	35.56%	52.07%
EBITDA Margin	16.90%	33.62%
EBIT Margin	0.40%	24.28%
ROIC	-8.18%	19.89%
Debt to EBITDA	11.12	1.68
Debt to Capital	74.8	58.42

Source: Bloomberg, adapted.

Appendix 12: Risk Matrix

Impact \ Probability	Low	Medium	High
High	S3 O2 C1 O4	F1	C2
Medium	O3 F2	S1 O1 S4	
Low	S2		F3

Source: *Student analysis.*

Appendix 13: Revenues

2020

Aligned with the Covid-19 outbreak it is expected a decrease in value for AML´s 2020F revenues. AML has a strong pre-order book for this year, however, one of the cars that were going to be launched this year (Aston Martin Valkyrie) is only going to be delivered in 2021. This represents a £364.5M expected revenue that goes from 2020 to 2021. There will only be 150 units of the car, which are all already sold at £2.43M per unit. Considering this, AML will launch four new cars this year (instead of five), Aston Martin DBX had already 1800 units in pre-order in January 2020, until now the company did not release new numbers, however, they say the number is increasing, with this information, I estimated 2000 units to be sold this year. Aston Martin Goldfinger DB5 Continuation has all its 25 units that will be produced already sold. AML did not release the number for DBS GT Zagato, however, they informed that there are only a few units left. The maximum production will be 19 units, I expect that 14 will be sold in 2020F. Lastly, Aston Martin Vantage Roadster, the company expects to sell 40% of the total units of the previous version sold, so I estimated that 250 would be sold. In the following table, it is possible to see the expected sale quantity and price of each one of the luxury cars. Summing all the values, it is an estimated revenue of £500.36M in 2020 for automobile sales.

New cars in 2020	Production	Expected Price M	Sold	Revenue
Aston Martin DBX	2000	£0.16	2000	£316.00
Aston Martin Vantage Roadster	300	£0.13	250	£31.61
Goldfinger DB5 Continuation	25	£2.75	25	£68.75
DBS GT Zagato	19	£6.00	14	£84.00
Total	2344		2289	£500.36

Source: *Student analysis.*

Additionally, the company released the revenues' total value in 2020F first quarter, obtaining a total value of £78.60M. I expect that the first quarter will be the worst quarter of the year, due to the global lockdown and new cars will only begin to be delivered in the second semester. The China automobile market has fallen in the first quarter, however, it is showing signals of recuperation and growth. Using China as a proxy, this is expected in the rest of the world, at different times depending on each country. In March 2020 all the China dealers were working at 100% and the rest of the world´s dealers were opening depending on their country situation.

The luxury companies are surprising the market, showing better results than the expected, and the HNWI are consuming more due to the annoying situation of isolation and lockdown.

Considering all this information, I estimate total revenue of £663.10M in 2020F, which £39.14M will come from the sale of parts in the last three quarters, £5M will come from Servicing (reduce value in 2020F due to the company focus in the productions and deliveries of the 2020 luxury cars) and £10 from Brands and motorsport.

	2019YE	2020F
Additional Sale of vehicles		£500.36
First Quarter Revenue		£78.60
Additional Sale of parts	£63.00	£39.14
Additional Servicing of vehicles	£9.30	£5.00
Additional Brands and motorsport	£27.40	£10.00
Total		£633.10

Source: *Student analysis.*

2021

The 2021 AML´s revenues are more difficult to predict than the 2020´s revenues since the company did not release yet the production values and prices of the new cars to be released in that year. Considering current information it is only expected a global vaccine in May 2021, which means that 2021 may also be impacted with Covid-19, however, I assume that the countries will be better prepared to deal with the virus and we will be able to live in a situation of deconfinement, yet dealing with the virus daily. Additionally, in 2021 the Aston Martin Lagonda team will enter Formula 1, which will bring the company to the highlights of the world's car enthusiasts and IFM estimates a positive growth in the global GDP, compared to the negative growth in 2020. To forecast AML´s 2021 revenues, I will assume 2020´s revenues as a base. In the automobile sales, I will make two changes, Aston Martin Valkyrie will enter with its £364.5M, as said before. Considering the information disclosed by the company, they are also having reservations for the Aston Martin DBX for 2021. Year in which it may be innovated, and new features added. The company did not release the number of cars in the 2021 pre-order book, so I estimated that the company will make 60% of the DBX´s 2020 revenues. This means the production of 1200 cars with total revenue of £189.6M, as may be seen in the table below.

Cars in 2021	Production	Expected Price M	Sold	Revenue
Aston Martin DBX	1200	£0.16	1200	£189.60
Aston Martin Valkyrie	150	£2.43	150	£364.50
Total	1350		1350	£554.10

Source: *Student analysis.*

Considering all this information, I estimated the total revenue of £871.2M in 2021F.

	2021F
AML´s 2020 Revenues (without DBX)	£317.10
Additional Sale of vehicles	£554.10
Total	£871.20

Source: *Student analysis.*

2022 to 2024

Regression between the world GDP growth and AML´s revenues growth was performed considering 11 years of historical data. The world GDP growth only explains in 30% the AML sales growth, since the regression has a square r of 0.3. The values are indicated in the following table.

	2022F	2023F	2024F
Revenues Growth	4.30%	3.72%	3.18%

Source: *Student analysis.*

Additionally, it was computed the sales growth, CAGR, median, and average using 10 years and 5 years of historical data. The results show a strong historical revenue´s growth rate in the last 10 years, results that improve if we only look to the last five years. The values may be seen in the table below.

Years	Growth	CAGR	Median	Average
10	178.43%	10.78%	10.76%	12.20%
5	95.48%	18.24%	16.32%	17.80%

Source: *Student analysis.*

AML´s revenue growth rate for 2022 was computed based on an arithmetic average between the historical 5-year CAGR and the growth rate given by the world GDP. It was assumed that in 2022 the Covid-19 pandemic will have already ended, and its effects will be zero or residual, allowing AML to return to similar sales figures of 2018 and 2019. The 2022 growth figure has been adjusted with the aim of reaching those values. AML´s revenue growth rates for 2023 and 2024 were computed based on an arithmetic average between the historical 10-year CAGR and the growth rate given by the world GDP, assuming a more conservative growth. The values are shown in the following table.

	2022F	2023F	2024F
Revenues Growth	15.00%	7.25%	6.97%
Revenues	£1 001.88	£1 074.54	£1 149.41

Source: *Student analysis.*

AML has sales worldwide, which means that they are exposed to a significant number of currencies. The revenues values were computed taking into consideration the forecasted currency rates. More information may be found in Appendix 28.

	2020F	2021F	2022F	2023F	2024F
Revenues	£633.10	£846.88	£1 002.44	£1 050.85	£1 176.18

Source: *Student analysis.*

Appendix 14: Inventories

“Inventories” contain parts for sale, service and production stock, finished vehicles, and work in progress. On the one hand, the company is increasing its portfolio with the manufacturing of new models, on the other hand, it is trying to decrease the number of inventories gathered in the past years. The company is implementing the reset plan and one of its bases is the adjust of the supply to the demand. Taking all of this into consideration I forecast that the variation of the finished vehicles will decrease 8% YoY. I based this on two main assumptions: all the vehicles that are going to be build will be sold, which makes a variance YoY of 0%; and, the company will sell 8% of the vehicles produced and gathered in the past years. Why a decrease of 8%? The 8% variation was computed with the objective that the company will reach a normal value of inventory in five years. This normal is assumed to be a value closed with the one obtained in 2017, the only year when the company had a profit. The other constituents will be forecasted as follow:

$$\text{Work in progress}_{\,t} = \text{Work in progress}_{\,t-1} + \frac{(\text{Sales}_t - \text{Sales}_{\,t-1})}{\text{Sales}_{\,t-1}}$$

$$\text{Parts for resale, service parts, and production stock}_t = \text{Parts for resale, service parts, and production stock}_{\,t-1} + \frac{(\text{Sales}_{\,t} - \text{Sales}_{\,t-1})}{\text{Sales}_{\,t-1}}$$

Inventories	2020F	2021F	2022F	2023F	2024F
Parts for resale, service parts	£43.68	£58.42	£69.15	£72.49	£81.14
Work in progress	£20.38	£27.26	£32.27	£33.82	£37.86
Finished vehicles	£91.82	£84.47	£77.71	£71.50	£65.78
Total Inventories	£155.87	£170.15	£179.13	£177.81	£184.77

Source: *Student analysis.*

Appendix 15: Non-Current Lease Liability

During the calculation of the Non-Current Lease Liability three assumptions were made, the Non-current Lease Liability suffers the total principal lease payment, gains all the addiction, and the principal lease payment is constant and equal to the 2019 YE percentage.

The Non-current Lease Liability was computed through the following formula:

$$\text{Total Non} - \text{Current Lease Liabilities}_{\,t} = \text{Total Non} - \text{Current Lease Liabilities}_{t-1} - \text{Principal Lease Payment}_{\,t} + \text{Addiction}_t$$

Where, $\text{Principal Lease payment}_t = \text{Total Lease Liabilities}_{\,t-1} \times \text{Principal payment Rate}$ and

$$\text{Addiction}_t = \text{Total Lease Liabilities}_{\,t-1} + \frac{\text{PPT}_t - \text{PPT}_{\,t-1}}{\text{PPT}_{\,t-1}}$$

	2018	2019	2020F	2021F	2022F	2023F	2024F
Δ Property, plant and equipment			-1.88%	4.37%	7.03%	5.40%	4.21%
Addiction to Lease Liability Value			£0.00	£4.41	£6.75	£5.06	£3.79
Lease liabilities Value	£116.50	£111.40	£100.98	£95.94	£93.71	£90.00	£85.37
Principal lease payment		10.9	£10.42	£9.45	£8.98	£8.77	£8.42
Lease liability - Principal Payment Rate (%)		9.36%	9.36%	9.36%	9.36%	9.36%	9.36%
Total Non Current Lease Liabilities		£97.30	£86.88	£81.84	£79.61	£75.90	£71.27

Source: *Student analysis.*

Appendix 16: CAPEX and Amortization/Depreciation

As a high luxury car brand, AML needs to invest heavily in intangible assets and property, plant, and equipment to present to the market new luxury cars every year. CAPEX represents the total amount invested by AML in those two types of assets. The forecasted total amount of CAPEX was estimated through the historical five-year (2015-2019) moving average of the ratio CAPEX to sales, with a cap of £310.50M (equal to 2018YE and higher historical value).

As stated in the table the investment in intangible assets is estimated at 71.23% of total CAPEX whereas property, plant, and equipment is 28,77%. This assuming a five-year historical average (2015-2019).

CAPEX	2020F	2021F	2022F	2023F	2024F
Revenue	£633.10	£846.88	£1 002.44	£1 050.85	£1 176.18
Investment in property, plant and equipment	£56.00	£76.42	£89.32	£89.32	£89.32
Investment in Intangible assets	£138.65	£189.23	£221.18	£221.18	£221.18
Total Capex	£194.65	£265.65	£310.50	£310.50	£310.50
Property, plant and equipment (%)	28.77%	28.77%	28.77%	28.77%	28.77%
Intangible assets (%)	71.23%	71.23%	71.23%	71.23%	71.23%
CAPEX/sales ratio	30.75%	31.37%	30.97%	29.55%	26.40%

Source: *Student analysis.*

As mentioned in Appendix 8, the depreciation and impairment of property, plant, and equipment was computed through the average depreciation and impairment rate (2015-19). The same calculation was performed to obtain the amortization and impairment of intangible assets. The depreciation and impairment of right-of-use lease assets were assumed to be equal to the depreciation and impairment rate of 2019.

Amortization/Depreciation and Impairment	2020F	2021F	2022F	2023F	2024F
Property, plant and equipment	£343.93	£358.95	£384.20	£404.93	£421.97
Depreciation and impairment of property, plant and equipment	£62.57	£61.40	£64.08	£68.59	£72.29
Depreciation Rate %	17.85%	17.85%	17.85%	17.85%	17.85%
Intangible assets	£1 201.08	£1 267.35	£1 358.78	£1 440.85	£1 514.52
Amortization and impairment of intangible assets	£121.17	£122.96	£129.75	£139.11	£147.51
Amortization Rate %	10.24%	10.24%	10.24%	10.24%	10.24%
Right-of-use lease assets	£68.61	£61.96	£58.72	£54.31	£49.34
Depreciation and impairment of right-of-use lease assets	£13.19	£11.06	£9.99	£9.47	£8.76
Depreciation Rate %	16%	16%	16%	16%	16%

Source: *Student analysis.*

Appendix 17: Tax Rate

The effective tax rate faced by AML depends on the UK corporate tax rate (19%, but will be 17% starting in 2020), overseas tax, and adjustments related to deferred tax. Due to the difficulty of predicting the last two components of the effective tax rate, I estimated an adjustment that will englobe the two. The effective tax rate will be computed as follow:

$$\text{Effective tax rate} = \text{UK Corporate tax} - \text{Adjustment}$$

With the purpose of computing the adjustment, I computed the difference between the income tax that AML would face if the company only had to pay the UK corporate tax and the income-tax that the company really faced. Afterward, the six-year historical (2014-2019) median and average of the difference in the proportion of loss/profit before tax were computed. Lastly, I analyzed the error given by each one of the approaches, which concluded the best approach was the median.

$$\text{Effective tax rate} = 19\% - 9{,}40\% = 7{,}60\%$$

	2014	2015	2016	2017	2018	2019	Average	Median
(Loss)/profit before tax	-£71.83	-£127.96	-£162.78	£86.73	-£68.20	-£104.30		
UK Tax Rate 19%	£13.65	£24.31	£30.93	-£16.48	£12.96	£19.82		
Income tax credit/(charge)	£7.08	£21.00	£15.20	-£7.73	£11.10	-£0.10		
Difference between the UK tax rate and the income tax of the year	-£6.57	-£3.31	-£15.72	£8.75	-£1.86	-£19.92		
% of that difference on the (Loss)/profit before tax	9.14%	2.59%	9.66%	10.09%	2.72%	19.10%	8.88%	9.40%
Difference using the average	-6.38	-11.37	-14.46	7.70	-6.06	-9.27		
Income tax estimated	£7.27	£12.94	£16.47	-£8.77	£6.90	£10.55		
Difference with the real income tax (absolute value)	£0.19	£8.05	£1.26	£1.04	£4.20	£10.65		
Difference using the median	-£6.75	-£12.03	-£15.30	£8.15	-£6.41	-£9.81		
Income tax estimated	£6.89	£12.28	£15.62	-£8.32	£6.55	£10.01		
Difference with the real income tax (absolute value)	£0.18	£8.72	£0.42	£0.59	£4.55	£10.11		

Source: *Student analysis.*

Appendix 18: Cost of Equity

	2020F	2021F	2022F	2023F	2024F	TV
MRP + CRP	5.33%	5.33%	5.33%	5.33%	5.33%	5.31%
RFR	0.32%	0.43%	0.52%	0.67%	0.76%	2.75%
Beta Levered	1.28	1.28	1.28	1.28	1.28	1.28
Ke	7.16%	7.27%	7.36%	7.51%	7.60%	9.56%

Source: *Student analysis.*

A modified Capital Asset Pricing Model (CAPM) was the method chosen to compute the cost of equity, as follows:

$$\text{Re} = \text{RFR} + \beta \times (\text{MRP} + \text{CRP})$$

Despite AML having sales worldwide, the company is sensitive to the United Kingdom´s risks, since the major of its costs and operations are in the UK. Considering this, a country risk premium (CRP) was added to the market risk premium (MRP) in the cost of equity calculations. Both MRP and CRP were computed based on the outputs of the Survey: Market Risk Premium and Risk-Free Rate used for 81 countries in 2020 (March 25, 2020).

The United Kingdom government bond yield was considered as a proxy of the risk-free rate (RFR) and a proxy of the forecast government bonds. For 2020F, the 10-year UK government bonds were chosen; for 2021F, the 12-year; for 2022F, the 15-year; and this continues until the terminal value. It was chosen the 30-year UK government bond plus 2% to consider the future uncertainties.

	Industry Average	Peers Average	Peers Median	Ferrari	FTSE 250	FTSE All Shares	FTSE 350	FTSE 350 Low Yield
Beta unlevered	0.50	0.77	0.61	1.12				
t	17%	17%	17%	17%				
D	15%	15%	15%	15%				
E	85%	85%	85%	85%				
D/E	0.18	0.18	0.18	0.18				
R_2					0.19	0.12	0.00	0.13
Beta Levered	0.57	0.89	0.69	1.28	1.78	1.77	0.06	1.85

Source: *Student analysis.*

The levered beta was estimated using four approaches:

Approach A: The levered beta was computed considering the weekly returns of 4 indexes, between October 2018 and June 2020: FTSE 250, FTSE All Shares, FTSE 350 and FTSE 250 Low Yield and AML weekly return. After computing the Beta for each one of the indexes, the Blume adjustment was performed, obtaining an adjusted beta. Additionally, the r squared was computed for each one of the indexes, which enabled me to conclude that none of the indexes was suitable, due to its low levels.

Approach B: Considering the Pure-Play Method on a group of peers. First, the average and median were computed using the unlevered beta value of its peers. After that, the following formula was used, considering the AML target level of debt:

$$B_L = B_U \times [1 + \frac{D}{E} \times (1 - tax\ rate)]$$

This approach was not considered the most accurate, since the chosen group of peers had different characteristics from AML, as they have a large portfolio not only selling luxury cars and also some of them are large groups.

Approach C: This approach has the same treatment as approach B, however it considers the industry average beta value. This value was gathered from Damodaran. This approach was not considered the most accurate, since, as in B, there are companies in the industry that are not completely comparable with AML.

Approach D: This approach has the same treatment as approach B, however, it was only considered one peer, Ferrari. This company has many characteristics in common with AML. There are more companies with similar characteristics of AML, however, they are private or belong to a large group, which makes it difficult to gather its beta's values. This approach was considered the most accurate. Although the comparison is only made with one peer, this is the one that most resembles AML. As seen throughout the document, Ferrari is financially stronger than AML. As such, an adjustment to Ferrari's unlevered beta has been made, an amount of 0.4.

AML Unlevered Beta	
Adjusted Unlevered Beta	1.12
Ferrari's Unlevered Beta	0.72
Adjustment	0.4

Source: *Student analysis.*

	2020F	2021F	2022F	2023F	2024F	TV
P/B	3.38	3.38	3.38	3.38	3.38	
Equity BV	£1 000.14	£993.59	£1 034.91	£1 136.81	£1 308.77	
Equity MV	£3 380.47	£3 358.34	£3 498.00	£3 842.43	£4 423.63	
Debt	£1 043.40	£1 028.03	£798.70	£786.62	£774.46	
E/V	76.41%	76.56%	81.41%	83.01%	85.10%	85%
D/V	23.59%	23.44%	18.59%	16.99%	14.90%	15%

Source: *Student analysis.*

In the calculations of the Pure-Play method, the equity and debt market values were used. The equity market value was estimated based on the price to book approach, with the assumptions of a constant P/B equal to 2019YE. The debt market value was estimated assuming the book value as a proxy. In each one of the years, the market values were used to obtain the market capital structure. For the terminal value, a D/V of 15% was estimated, following the decreasing tendency.

Additionally, the unlevered cost of equity was also computed, obtaining the following values.

	2020F	2021F	2022F	2023F	2024F	TV
MRP + CRP	5.33%	5.33%	5.33%	5.33%	5.33%	5.31%
RFR	0.32%	0.43%	0.52%	0.67%	0.76%	2.75%
Beta Unlevered	1.12	1.12	1.12	1.12	1.12	1.12
Ku	6.29%	6.40%	6.49%	6.64%	6.72%	8.69%

Source: *Student analysis.*

Appendix 19: Cost of Debt

AML total cost of debt was computed considering its interest-bearing liabilities (borrowings and lease liabilities). The lease liability cost of debt is considered constant over time and was computed, using the values of 2019, as:

$$\text{Cost of Debt (Lease)}_t = \frac{\text{Interest Expense}_t}{\text{Lease liability value}_{t-1}}$$

The borrowings cost of debt was computed, using the values of 2019 as:

$$\text{Cost of Debt (Borrowings)}_t = \frac{\text{Interest Expense}_t}{\text{Borrowings value}_{t-1}} \text{ (for 2020)}$$

The bank´s spread is constantly changing, linked to changes in the interest rate market, as do bonds with variable interest rates. Considering this and with the purpose of complementing the calculation of the cost of debt, a spread linked to the variation of 3 Month LIBOR Rate was added to the cost, starting in 2021 onwards. For the terminal value was considered the 20-year 3 Month LIBOR rate. As shown below:

$$\text{Cost of Debt (Borrowings)}_t = \text{Cost of Debt (Borrowings)}_{t-1} + \Delta \text{ Forecast 3 Month LIBOR Rate}_t$$

The total cost of debt considers the weights of each type of debt, as:

$$\text{Cost of Debt}_t = \text{Cost of Debt (Borrowings)}_t \times \text{Weight in total debt (Borrowings)}_{t-1} + \text{Cost of Debt (Lease)}_t \times \text{Weight in total debt (Lease)}_{t-1}$$

	2020F	2021F	2022F	2023F	2024F	TV
Cost of debt Lease	3.95%	3.95%	3.95%	3.95%	3.95%	3.95%
% in total debt	10.46%	9.68%	9.33%	11.73%	11.44%	10.53%
Cost of debt borrowings	7.28%	7.25%	7.30%	7.38%	7.45%	7.61%
% in total debt	89.54%	90.32%	90.67%	88.27%	88.56%	89.47%
Libor 3M	0.17%	0.14%	0.19%	0.27%	0.34%	0.50%
Changes in Libor 3M		-0.03%	0.06%	0.08%	0.07%	0.17%
Total Cost of Debt	6.93%	6.93%	6.99%	6.98%	7.05%	7.23%

Source: *Student analysis.*

Appendix 20: WACC

For the calculation of the WACC rate in each one of the years, the following formula was used:

$$\text{WACC} = \frac{E}{V} \times \text{Re} + \frac{D}{V} \times \text{Rd} \times (1 - \text{Effective Tax rate})$$

The equity and debt are in market values, as it was used in the calculation of beta levered. For the terminal value, the estimated target debt-to-capital ratio was used.

	2020F	2021F	2022F	2023F	2024F	TV
Equity MV	£3 380.47	£3 358.34	£3 498.00	£3 842.43	£4 423.63	
Debt MV	£1 043.40	£1 028.03	£798.70	£786.62	£774.46	
V	£4 423.86	£4 386.37	£4 296.70	£4 629.05	£5 198.09	
E/V	76.41%	76.56%	81.41%	83.01%	85.10%	85.00%
D/V	23.59%	23.44%	18.59%	16.99%	14.90%	15.00%
Ke	7.16%	7.27%	7.36%	7.51%	7.60%	9.56%
Kd	6.93%	6.93%	6.99%	6.98%	7.05%	7.23%
t	17%	17%	17%	17%	17%	17%
WACC	6.83%	6.91%	7.07%	7.22%	7.34%	9.03%

Source: *Student analysis.*

Appendix 21: Terminal Growth Rate

After more than 100 years of history, it is expected that AML continues to operate and deliver the best luxury cars to the market, in other words, I am assuming the going concern assumption. It assumed that the cash flows will grow perpetually at the same growth rate YoY, through the continuous CAPEX investment. The terminal growth rate was computed differently for each one of the DCF methods. For the FCFF the following formula was used:

$$\text{g} = \text{Reinvestment rate} \times \text{ROIC}$$

FCFF	2020F	2021F	2022F	2023F	2024F
Reinvestment rate	1343%	-2%	63%	59%	22%
ROIC	0.78%	3.06%	5.75%	7.99%	11.14%
g	10.46%	-0.05%	3.63%	4.69%	2.46%

Source: *Student analysis.*

For the FCFE instead of ROIC, the growth rate was computed with ROE, as follows:

$$\text{g} = \text{Reinvestment rate} \times \text{ROE}$$

FCFE	2020F	2021F	2022F	2023F	2024F
Reinvestment rate	1343%	-2%	63%	59%	22%
ROE	-4.76%	-0.52%	4.20%	9.12%	12.98%
g	-63.94%	0.01%	2.65%	5.35%	2.87%

Source: *Student analysis.*

Looking at the figures, we may observe the reinvestment rate is decreasing through the years, whereas the ROIC and ROE are increasing. The Terminal growth rate was assumed to be the forecasted median (2020-2024) minus an adjustment of 1.96% that takes into consideration the uncertainty period related with Brexit, Covid-19, and the company´s capacity to implement the reset plan, being 1,67% for the FCFF and 0,69% for the FCFE.

Appendix 22: FCFF

In the calculations of the equity value, an adjustment was made to discount non-controlling interests.

FCFF							
	in Millions	2020F	2021F	2022F	2023F	2024F	TV
+	Net Income	-£47.62	-£5.15	£43.47	£103.69	£169.87	
+	Interest*(1-tax rate)	£61.25	£59.99	£63.03	£46.26	£46.00	
+	Non Cash Charges	£197.33	£190.76	£199.00	£214.48	£220.34	
-	Net increase in WC	£152.67	-£70.97	-£51.82	-£18.47	-£41.45	
-	CAPEX	£194.65	£265.65	£310.50	£310.50	£310.50	
	FCFF	-£136.36	£50.91	£46.82	£72.41	£167.16	£2 308.99
	t		1	2	3	4	
	WACC		6.91%	7.07%	7.22%	7.34%	9.03%
	g						1.67%
	DCF		£47.62	£40.84	£58.75	£125.94	£1 739.63
	Enterprise Value	£2 012.77					
	Equity value	£1 529.83					

Source: *Student analysis.*

Appendix 23: FCFE

The company has a predicted reduced equity value when calculated with the FCFE method. This low value is explained by the growth stage that the company is inserted in, with heavy reinvestment and no dividends, AML debt repayment and the terminal growth rate. The equity value was adjusted to discount the non-controlling interests.

FCFE							
	in Millions	2020F	2021F	2022F	2023F	2024F	TV
+	Net Income	-£47.62	-£5.15	£43.47	£103.69	£169.87	
+	Non Cash Charges	£197.33	£190.76	£199.00	£214.48	£220.34	
-	Net increase in WC	£152.67	-£70.97	-£51.82	-£18.47	-£41.45	
-	CAPEX	£194.65	£265.65	£310.50	£310.50	£310.50	
+	Net Borrowings	-£21.90	-£15.37	-£229.33	-£12.08	-£12.17	
-	Preferred Dividend	£0.00	£0.00	£0.00	£0.00	£0.00	
	FCFE	-£219.51	-£24.45	-£245.54	£14.07	£108.99	£1 236.64
	t		1	2	3	4	
	Cost of Equity		7.27%	7.36%	7.51%	7.60%	9.56%
	g						0.69%
	DCF		-£22.79	-£213.02	£11.32	£81.33	£922.72
	Equity Value	£765.46					

Source: *Student analysis.*

Appendix 24: APV

		APV					
	in Millions	2020F	2021F	2022F	2023F	2024F	TV
+	Net Income	-£47.62	-£5.15	£43.47	£103.69	£169.87	
+	Interest*(1-tax rate)	£61.25	£59.99	£63.03	£46.26	£46.00	
+	Non Cash Charges	£197.33	£190.76	£199.00	£214.48	£220.34	
-	Net increase in WC	£152.67	-£70.97	-£51.82	-£18.47	-£41.45	
-	CAPEX	£194.65	£265.65	£310.50	£310.50	£310.50	
	FCFF	-£136.36	£50.91	£46.82	£72.41	£167.16	£3 362.70
	t		1	2	3	4	
	Ku		6.29%	6.40%	6.49%	6.64%	6.72%
	g						1.67%
	DCF		£47.90	£41.36	£59.96	£129.27	£2 600.45
	Unlevered Firm Value	£2 878.94					
	Tax Rate		17%	17%	17%	17%	
	Interest * tax rate		£12.29	£12.91	£9.48	£9.42	£139.82
	t		1	2	3	4	
	Kd		6.93%	6.99%	6.98%	7.05%	7.23%
	Discounted Tax Shield		£11.49	£11.28	£7.74	£7.18	£106.48
	VCD	£144.17					
	Equity Value	£2 540.17					

Source: *Student analysis.*

Appendix 25: Residual Income

The residual income method is suitable for AML due to its characteristics of being appropriate for non-dividend paying companies in which the free cash flow may be negative or unpredictable.

in Millions	2020F	2021F	2022F	2023F	2024F	TV
Net Income	-£47.62	-£5.15	£43.47	£103.69	£169.87	
Equity BV	£986.04	£979.49	£1 020.81	£1 122.71	£1 294.67	
Ke	7.16%	7.27%	7.36%	7.51%	7.60%	9.56%
Equity Charge	£70.60	£71.21	£75.17	£84.33	£98.33	
Residual Income	-118.22	-76.37	-31.70	19.36	71.53	811.61
t		1	2	3	4	
g						0.69%
Discounted Residual Income		-£71.19	-£27.50	£15.58	£53.37	£605.58
Book value	£986.04					
Equity Value	£1 547.78					

Source: *Student analysis.*

Appendix 26: Relative Valuation

The Relative Valuation was computed based on two groups of peers. The first group (9 peers) considers players of the automobile industry that may have a segment or a subsidiary that competes in the same segments as Aston Martin Lagonda. All the companies in this group are listed, however, some are large groups, whereas others are single companies as AML. The use of this group for relative valuation is not the most accurate due to the differences between these players and AML.

Company	P/E Ratio	EV/EBITDA	EV/Revenue	EV/EBIT	P/Book Value
Ferrari NV	44.45	22.66	7.82	34.14	20.04
General Motors Co	9.87	3.12	0.33	6.51	0.91
Bayerische Motoren Werke AG	11.40	9.02	1.01	19.97	0.67
Toyota Motor Corp	14.12	16.50	1.49	28.76	0.93
Volkswagen AG	9.93	1.87	0.26	5.74	0.62
Honda Motor Co Ltd	12.60	11.77	0.77	28.34	0.60
Daimler AG	17.85	2.57	0.21	8.68	0.69
Tesla Inc	187.36	63.18	9.25	137.56	32.92
Ford Motor Co	4940.00	4.44	0.18	22.57	0.89

Source: *Student analysis.*

	P/E Ratio	P/Book Value	EV/EBITDA	EV/Revenue	EV/EBIT
Average	583.06	6.47	15.01	2.37	32.47
Median	14.12	0.89	9.02	0.77	22.57
Equity Value Average	-£27 764.59	£6 474.19	£3 159.34	£1 499.88	£438.13
Equity Value Median	-£672.48	£893.42	£1 897.85	£490.40	£304.55
Shares	1824	1824	1824	1824	1824
Average P/sh	-£15.22	£3.55	£1.73	£0.82	£0.24
Upside potential	-2491%	458%	172%	29%	-62%
Median P/sh	-£0.37	£0.49	£1.04	£0.27	£0.17
Upside potential	-158%	-23%	63%	-58%	-74%

Source: *Student analysis.*

Looking at the results, the median gives more conservative p/sh than the average because reduces the spikes observed in some companies. The P/E ratio should not be considered due to AML's negative earnings. All the average ratios, instead EV/EBIT, give a buy recommendation, whereas, in the median ratios, only the EV/EBITDA gives that result.

The second group (Ferrari) considers a player that competes in the same segment as AML. This group is more accurate for relative valuation than the first one, however, it has a lack in the number of peers, which may skew the final results.

	P/E Ratio	P/Book Value	EV/EBITDA	EV/Revenue	EV/EBIT
Ferrari NV	44.45	20.04	22.66	7.82	34.14
Equity Value	-£2 116.41	£20 038.67	£4 768.94	£4 951.30	£460.61
Shares	1824	1824	1824	1824	1824
P/sh	-£1.16	£10.99	£2.61	£2.71	£0.25
Upside potential	-282%	1626%	311%	326%	-60%

Source: *Student analysis.*

The group has only one company, thus it will obtain the same results for the median and the average. The P/E ratio should not be considered due to AML's negative earnings. All the ratios, instead EV/EBIT, give a buy recommendation. The p/sh is sensitive to the spikes, which makes the results skewed.

The following table summarizes the p/sh obtained computing the average median P and EV ratios p/sh. The results reveal more conservative values in the 9 peers' group and bolder values in the Ferrari peers' group.

	9 Peers		Ferrari	
	P Ratio	EV Ratio	P Ratio	EV Ratio
P/sh	£0.06	£0.49	£4.91	£1.86

Source: *Student analysis.*

In conclusion, relative valuation is not the best method for the valuation of AML. There is a difficulty in identifying single listed companies in the industry. Several competitors of AML are inserted in groups, others are private. There is only one company that resembles the entity. Additionally, due to the reduced number of similar companies, relative valuation is biased by the spikes that the comparable company may have in each ratio.

Appendix 27: Price per Share

In the following table, it is possible to see the summary of the price per share given with each one of the valuation methods. The principal valuation, the FCFF gives a price per share of £0.84 with an upside potential of 31.75%. This is supported by the APV and Residual Income valuation. The FCFE gives a sell recommendation due to the current company stage, as explained before. Focusing on the relative valuation, the RV9P and the RV9EV give a sell recommendation, whereas the RVFP and RVFEV give a strong buy recommendation. These numbers were explained before in Appendix 26.

	FCFF	FCFE	APV	RI	RV 9 P	RV 9 EV	RV F P	RV F EV	Market Price 31/03/2020
Equity Value	£1 529.83	£765.46	£2 540.17	£1 547.78	£110.47	£897.60	£8 961.13	£3 393.62	
# Shares	1824	1824	1824	1824	1824	1824	1824	1824	
Price/sh	£0.84	£0.42	£1.39	£0.85	£0.06	£0.49	£4.91	£1.86	£0.64
Upside potential	31.75%	-34.08%	118.76%	33.30%	-90.49%	-22.70%	671.73%	192.26%	

Source: *Student analysis.*

Appendix 28: Foreign Currency Exposure

AML has some lines that are exposed to exchange rates: revenues, trade payables, trade receivables, and lease liabilities. Considering Longforecast information, the following exchange rates were forecasted.

Rate	2019	2020F	2021F	2022F	2023F	2024F
Euro	1.18	1.079	1.131	1.123	1.072	1.021
US Dollar	1.33	1.272	1.316	1.223	1.311	1.217
Yuan	9.23	9.188	9.521	9.455	9.749	9.31

Source: *Longforecast, adapted.*

During the calculations two assumptions were considered: the exposure percentages for each currency are constant and equal to the 2019YE percentages; the trade payables and trade receivables are only affected in their current values, whereas the lease liability is affected in its non-current value. The following differences were identified and treated accordingly.

	Currency	2020F	2021F	2022F	2023F	2024F
Trade and other receivables	Euro	£1.10	-£0.70	£0.11	£0.67	£0.70
	US Dollar	£1.95	-£1.80	£4.13	-£3.57	£3.63
	Chinese	£0.05	-£0.44	£0.09	-£0.35	£0.51
Trade and other payables	Euro	£6.21	-£4.27	£0.72	£4.82	£5.66
	US Dollar	£1.58	-£1.55	£3.86	-£3.67	£4.21
	Chinese	£0.05	-£0.49	£0.11	-£0.47	£0.76
Lease liabilities	Euro	£0.16	-£0.08	£0.01	£0.07	£0.08
	US Dollar	£0.01	-£0.01	£0.01	-£0.01	£0.01
	Chinese	£0.00	-£0.01	£0.00	-£0.01	£0.01
Net Balance		-£4.92	£3.48	-£0.38	-£3.98	-£5.89

Source: *Student analysis.*

Two additional assumptions were created concerning sales. First, it was assumed that the sales per region will be constant and equal to 2019YE percentages, second, the principal currency of each region will be the proxy currency for that region, that is, EMEA the euro, Asia Pacific the Yuan, and Americas the Us Dollar. The following revenues were obtained.

Values at the forecasted Rates					
	2020F	**2021F**	**2022F**	**2023F**	**2024F**
Revenues	£633.10	£846.88	£1 002.44	£1 050.85	£1 176.18
EMEA	£115.86	£152.10	£176.16	£197.92	£222.29
Asia Pacific	£141.18	£187.48	£217.11	£225.83	£252.96
Americas	£221.59	£294.73	£364.71	£364.90	£420.47
UK	£154.48	£212.57	£244.46	£262.19	£280.46

Source: *Student analysis.*

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Abbreviations

Adjusted Present Value (APV)
Aston Martin Lagonda Global Holdings Plc (AML)
Beta Levered (BL)
Beta levered (β)
Beta Unlevered (BU)
Book Value (BV or B)
Brand Strength Index (BSI)
Capital Asset Pricing Model (CAPM)
Capital Expenditure (CAPEX)
Cash Flow from Operations (CFO)
Compound Annual Growth Rate (CAGR)
Cost of Debt (Kd or Rd)
Cost of Equity (Ke or Re)
Cash Flow (CF)
Country Risk Premium (CRP)
Debt (D)
Discounted Cash Flow (DCF)
Dividend Discount Model (DDM)
Depreciation &Amortization (D&A)
Earnings Before Interest & Taxes (EBIT)
Earnings Before Interest, Taxes, Depreciation & Amortization (EBITDA)
Economic Value Added (EVA)
Enterprise Value (EV)
Equity (E)
Europe, Middle East, and Africa (EMEA)
Ferrari Peer (F)
Forecast (F)
Free Cash Flow to Equity (FCFE)
Free Cash Flow to the Firm (FCFF)
Gross Domestic Product (GDP)
Growth rate (G)
High Luxury Segment (HLS)
High-Net-Worth Individual (HNWI)
Initial Public Offering (IPO)
International Monetary Fund (IMF)
Long-Term Incentive Plan (LTIP)
Luxury Segment (LS)
Market Value (MV)
Market Risk Premium (MRP)
Millions (M)
Months (M)
Net Profit (NP)
Net Working Capital (NWC)
9 Peers (9)
Per share (/sh)
Price (P)
Price to Book (P/B)
Profit and Loss (P&L)
Property, plant, and equipment (PP&E)
Relative Valuation (RV)

Return on Assets (ROA)
Return on Capital employed (ROCE)
Return on Equity (ROE)
Return on Invested capital (ROIC)
Research and Development (R&D)
Residual Income (RI)
Revenue (Rev)
Risk-free rate (RFR)
Selling, General and Administrative Expenses (SG&A)
Sport Utility Vehicle (SUV)
Strengths, Weaknesses, Opportunities, and Threats (SWOT)
Sustainable Development Goals (SDG)
Target Price (TP)
Tax rate (t)
Terminal Value (TV)
United Kingdom (UK)
United Nations (UN)
United States (US)
United States of America (USA)
Unlevered Cost of Capital (Ku)
US Dollar (USD)
Value (V)
Year End (YE)
Year on Year (YoY)
Weighted Average cost of capital (WACC)
Working Capital (WC)

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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%