



CFA Institute

CFA Institute Research Challenge

Hosted in
CFA Society Italy

The Blue Tape

INVESTMENT SUMMARY

We initiate our coverage on Ferrari N.V. (RACE) with a **HOLD recommendation** with a 1-year target price of €155.21, corresponding to a -1.53% total shareholders return to the closing price on February 13th, 2020. Our target price calculation is based on a mix of two methodologies: 1) an augmented-Discounted Cash Flow (DCF) to Firm model with a target price of €154.89, and 2) a Multiples Analysis with a target price of €155.85, with weights 2/3 and 1/3 respectively. We decide to underweight the relative valuation approach because of the scarcity of suitable comparables.

Highly visible growth: execution is entirely in management's hands.

RACE's stock fair value is driven by:

- High visibility on short-term and long-term targets (revenues CAGR FY19-FY22E and FY19-FY28E +8.52% and +6.48%, respectively; EBIT margin FY22E and FY28E 28.01% and 34.17%, respectively) thanks to growing personalization/mix improvement and merchandising strengthening;
- Strong cash flows generation and supreme EPS growth (CAGR FY19-24E +16.6% and +9.31%, respectively);
- Additional potential upside from further value creation opportunities, especially in the limited-edition cars pillar, which allow the company to enhance both the strong brand awareness and its significant pricing power.

The most powerful luxury sports car brand in the world...

Ferrari behaves as a luxury company thanks to its

- Brand Awareness: the iconic horse logo symbolizes innovation, state-of the-art sporting performance, and engineering heritage. Its Formula 1 team, Scuderia Ferrari, is the most successful in F1 history;
- Exclusivity: deliberate and intentional low-volume production strategy (ca. 10K vehicles produced in FY19), with long waiting lists. This conscious strategy is intended to maintain scarcity effect and to promote the company's reputation;
- Pricing Power, with low or no demand-elasticity to price;
- Resilient Aftermarket Values: 9 of the 10 most valuable cars auctioned in the past 3 years were Ferraris;
- Very high Technological Barriers and few real competitors.

...with special features that make it really unique.

Ferrari's business model more closely resembles exclusive luxury products companies and sets it far apart from the Automaker industry. This is reflected in: (i) focus on high-net-worth individual clients; (ii) strong client loyalty: in FY19, 32% of buyers already owned at least 1 Ferrari's car; (iii) high-margin personalization programmes; (iv) planned volumes often entirely pre-sold before production begins.

A fairly-priced luxury company that happens to make cars. Our valuation methodologies lead to very similar results in terms of target prices and indicate that the market fully incorporates the forward-looking evolution of the growth and risks of Ferrari's business, in line with a **HOLD recommendation**.

Powerful yet not infrangible. Although the business is definitely resilient, Ferrari is not immune to low-probability risks of a potential reshaping of the Ultra-Luxury Cars industry, such as:

- Changes in the F1 revenue sharing mechanism, penalizing legislation changes for polluting cars;
- Hybridization, connectivity and millennial generation being key drivers forward looking;
- Evolving regulatory requirements likely affecting the company's products development plans and possibly limiting its profitability.

Coverage: February 13th, 2020

HOLD

Closing Price (€)	158.65
Target Price (€)	155.21
Downside	-2.17%
Dividend Yield	0.64%
Total Return	-1.53%

Min 52 week (€)	110.15
Max 52 week (€)	173.79
Market Cap (€mln)	29,488
Enterprise Value (€mln)	32,218
Shares Outstanding (mln)	185.87
Float	61.70%
Beta (5Y Monthly)	0.69
Average Daily Volume (3 Months) (mln)	0.43

Source: Thomson Reuters

Valuation

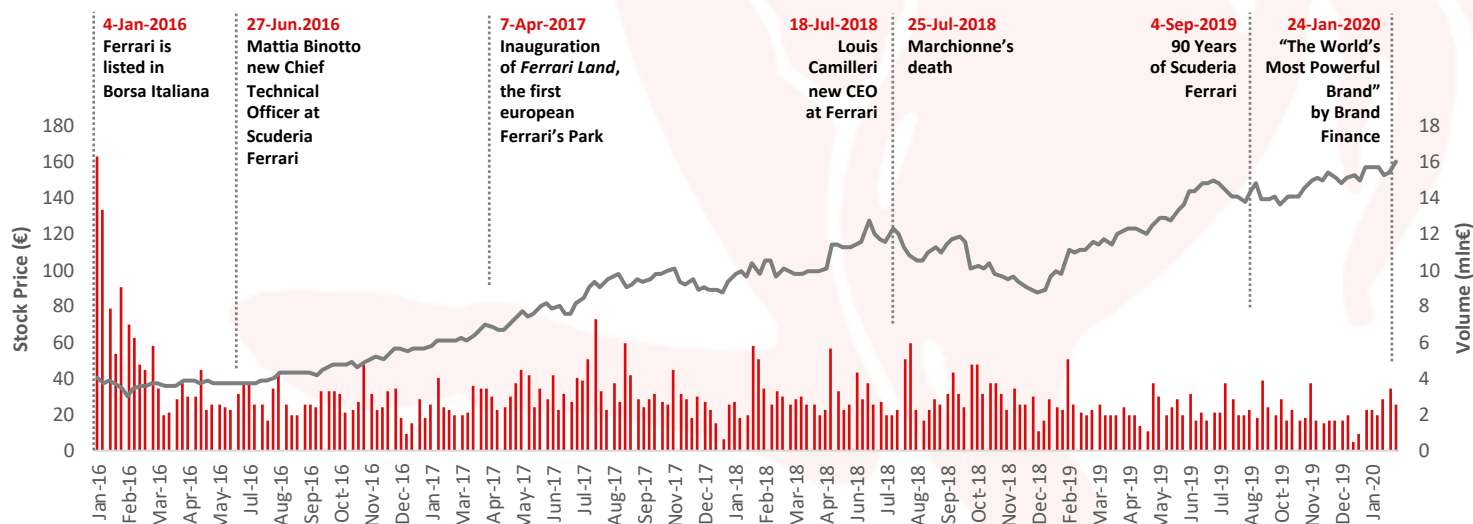
Augmented-DCF Target Price (weight 2/3) (€)	154.89
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Multiples Analysis Target Price (weight 1/3) (€)	155.85
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Source: team assessment



Exhibit: Ferrari vs FTSE MIB performance
(source: FactSet)



BUSINESS DESCRIPTION

COMPANY PRESENTATION

With a market cap of €28bn and more than €3bn of revenues, Ferrari (NYSE/MTA: RACE) is an Italy-based company specialized in the designing, engineering, manufacturing and retailing of luxury performance sports cars. Headquartered in Maranello, it is one of the world's leading luxury brands and its iconic horse logo symbolizes exclusivity, innovation, state-of-the-art sporting performance, and engineering heritage. Launched in 1929 by Enzo Ferrari, its Scuderia Ferrari is the most successful team in Formula 1 history, with 234 Grand Prix victories, 16 Constructor World titles and 15 Drivers World titles. After nearly 80 years of operating as a privately owned company, in 2015 RACE went public on the New York Stock Exchange and, since 2016, it has also been listed in the Italian Stock Exchange.

BUSINESS STRATEGY

Ferrari aims at maintaining its leadership position in the luxury car market through its controlled growth, innovation development and portfolio diversification. More precisely, its mission of building cars, symbols of Italian excellence, to win both on road and track relies on the following business strategy:

- Low volume production:** RACE's strategy is to keep its production limited (in-line with the founder Enzo Ferrari's leitmotiv "We sells one car less than the market demands") – to preserve exclusivity and consolidate its strong brand awareness. Characterized by strong pricing power (i.e., no demand elasticity to price), shown also in the resilient aftermarket values, and long waiting lists, such business model is further strengthened by i) a growing personalization program for clients wishing to create a truly tailor-made car that reflects their own unique personalities and tastes (See Exhibit 2 and Appendix 1); and ii) after sales programs to guarantee Ferrari's clients that their car is always as good as the day it was driven off the production line (an exclusive seven-year free maintenance contract in addition to the standard factory three-year warranty);
- Focus on quality: high performance and technology:** RACE is a pioneer of the most innovative technologies, owing more than 150 machineries' patents. More importantly, know-how from racing activities is constantly transferred to road cars. Such high standards are achieved by an in-house production strategy in which the company prefers to "make" rather than "buy" the essential cars' components (e.g., engine blocks, cylinders heads and crankshafts are produced in Maranello). At the same time, Ferrari also benefits from the synergies with 14 key strategic innovation partners for bodyworks, chassis manufacturing and for powertrain and transmissions (including Pirelli, Brembo, Riedel, Iveco, NGK, SKF).
- Portfolio diversification and short product life cycle:** Ferrari typically keeps 4 (or more) range models in production at any time, and launches at least one new model every year, for a life cycle of 4/5 years + 3/4 years for the modified version.
- Strong client loyalty and selective targeting:** Clients represent an important source of value for RACE, since most of its cars are sold to existing Ferrari's owners (ca. 34% of Ferrari's clients own more than one car). Therefore, the company uses selective targeting to choose its potential clients by carefully checking their background.
- Omni-channel distribution model:** RACE consolidates its brand and captures new customers demand by acting in different market segments (especially lifestyle merchandising and entertainment). This diversification strategy is provided through an omni-channel distribution that makes all Ferrari-branded products available in physical stores and online worldwide. At the same time, RACE does not own cars dealerships and selects them based on strict scrutiny and reputation, financial solidity and track record of the dealer.

Geographical segments: Ferrari sells cars to over 60 countries worldwide (See Exhibit 4) through a network of 187 point of sale, divided in 4 regional areas: Europe, Middle East, India and Africa (EMEA, 90 point of sale), Americas (49), Greater China (22), and Rest of Asia-Pacific region, excluding Greater China (Rest of APAC, 26). In FY2019, these regional markets represented, respectively, 48%, 29%, 8%, and 15% of corresponding shipments.

Business segments: Ferrari's business can be divided into four main divisions: i) Cars-Spare Parts, ii) Engines production, iii) Sponsorship, Commercial & Brand (which includes Scuderia Ferrari) and iv) Other (See Exhibit 5).

1. Cars-Spare Parts. This business segment accounts for more than 78% of group sales in FY19 and gives raise to ca.22% margin on every vehicle sold (whereas Ford, for example, barely gets 1.2%-1.5%). Ferrari Line-up strategic pillars are (See Appendix 1 and Exhibit 3):

- Sports Range** – Characterized by performance over comfort. These cars employ the same technologies used in Formula 1 [Average Selling Price (ASP): ca. €325k]
- Gran Turismo Range** – Mainly focused on comfort and quality of life on-board [ASP: ca. €220k]
- Special Series** – Especially targeted to collectors. These cars are limited in time or volume and introduce new product concepts [ASP: ca. €275k]
- Icona** – These cars reinterpret Ferrari iconic cars in a modern view. Deliveries will start in 2019 with the first limited edition Monza SP [ASP: ca. €1.6 mln]
- Fuoriserie (limited edition) and One-off models** – The first ones are identified by innovative features and futuristic design and are depicted as the precursors of technological innovations for future models. The second ones are produced in singleton and are a clear expression of clients' unique personalities and tastes.

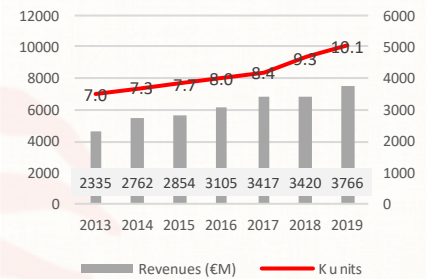


Exhibit 1: Net Revenues (right €M) and Shipments (K units left) (source: company data, team assessment)

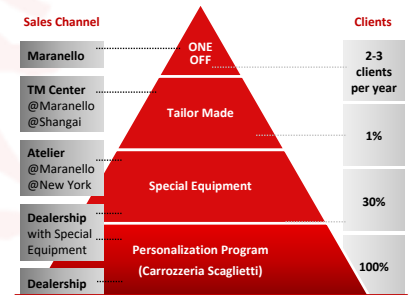


Exhibit 2: Personalization and Tailor Made Programmes (source: team assessment)

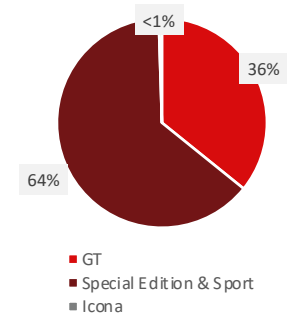


Exhibit 3: Car shipments by pillar (source: company data, team assessment)

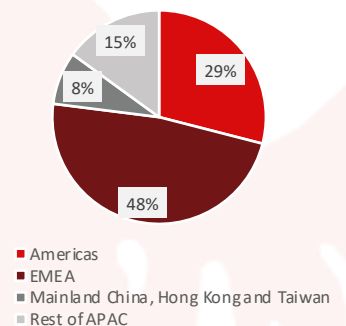


Exhibit 4: Shipments by region (source: company data, team assessment)

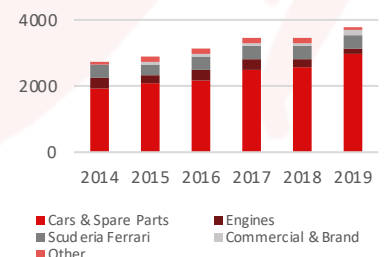


Exhibit 5: Revenues by business division (source: company data, team assessment)

2. Engines (ca. 5.3 % of FY19 revenues) This business segment mainly consists in the production of V12, V8 and V6 engines for Maserati. (See Appendix 1) In 2018, RACE provided an average of 177 engines per day, including those for Maserati (ca. 10 V12, 43 V8 and 124 V6) which contributed to 6,4% of FY18 revenues. Ferrari provides also engines to several F1 racing teams, including Sauber (since 2010), Marussia (for the two-year period 2014-15), Toro Rosso (since 2016) and the US team Haas (since 2016), representing 1.4% of FY18 revenues.

3. Sponsorship, Commercial & Brand (ca. 14.3% of FY19 revenues): This division can be further disentangled in Commercial & Brand and Scuderia Ferrari.

- **Commercial & Brand.** (ca. 3.3% of FY19 revenues) The company licenses Ferrari brand to a selected number of producers and retailers of luxury and lifestyle goods, and sells Ferrari-branded merchandise through a network of 20 Ferrari owned stores and 25 franchised stores (including 15 Ferrari Store Junior) as well as on its website. It also earns royalties through theme parks (in Abu Dhabi since 2010 and in Barcelona since 2017), museums and video game industry (Ferrari Esports Platform).” (See Appendix 1)
- **Scuderia Ferrari.** (ca. 11% of FY19 revenues) Formula 1 plays a crucial role for Ferrari strategy of value creation since it 1) contributes to strengthen its brand visibility and its image of exclusivity, innovation, and high performance, and 2) represents an important source of technological innovation for both sports and GT cars. Over the years, historical success in F1 world championship has enabled Ferrari to benefit from important sponsorships (€229.5 mln in FY2019), such as Philip Morris (for over 40 years), Shell (since 1996) and Santander (since 2008). (See Appendix 1)

4. Other. (ca. 2.8% of FY19 revenues): This includes financial revenues related to the financing activity (Ferrari Financial Services) and the Mugello racetrack.

Development of hybrid powertrains and electric cars: from race to RAC-E. Ferrari is investing a considerable amount of resources in the development of hybrid powertrains: the company expects ca. 60% of its cars to be hybrid in the next few years (compared to ca. 1% in 2018, represented mainly by *LaFerrari Aperta*). Between next year and 2022, several new models will be launched, including the first FUV (Ferrari Utility vehicle) *Purosangue*, a totally new model not to be considered a Suv, whose launch has been postponed to 2022 to make it perfect. As recently reported by CEO Camilleri, Ferrari does not expect to launch electric cars before 2025 due to the complex technology required for the batteries that have to be developed to enter into this new segment.

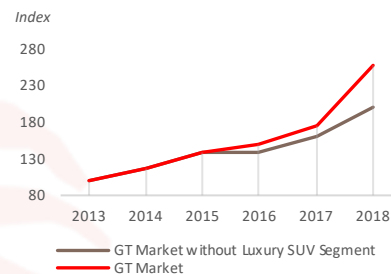


Exhibit 6: Gran Turismo market growth
(source: company data, team assessment)

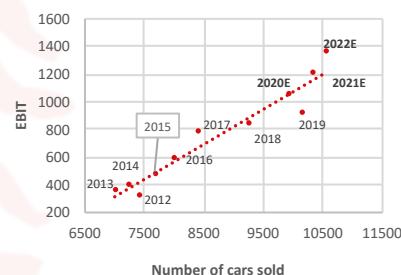


Exhibit 7: EBIT (€M) by cars sold (units)
(source: team assessment)

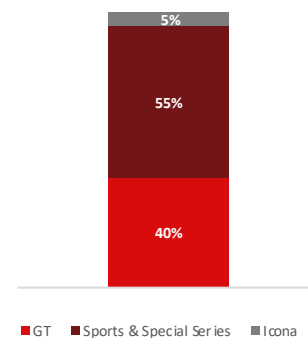


Exhibit 8: Car shipments by segment 2022E
(source: company data, team assessment)

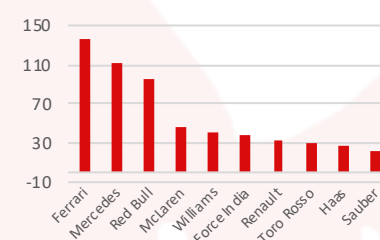


Exhibit 9: 2018 Constructor's Championship Bonus (€M) (source: company data, team assessment)



Exhibit 10: Cars sold worldwide
(source: company data, team assessment)

INDUSTRY OVERVIEW AND COMPETITIVE POSITIONING

Ferrari's core business is focused on the production of luxury cars. To better highlight the company's industry characteristics and its competitive positioning we first investigate the whole automaker sector, and then focus on the niche market represented by the luxury and ultra-luxury car makers.

The automaker (AM) industry is a growing segment (+5.1% CAGR 2009-2018) that includes several subgroups: engineering, design, next generation manufacturing, distribution and aftermarket. With an estimated CAGR of 5.0% in FY20 and 92mln of cars sold in FY19 (See Exhibit 10), this sector is renowned for the companies' low margins as well as the complex and lengthy sales cycles.

The main market demand forces that characterize the AM industry are:

- **Slowing GDP growth in advanced markets.** The industry is expected to suffer from the advanced countries' growth slowdown in the next years, with 2019E-2021E GDP CAGR of 1.15% in the Eurozone and 1.8% in the USA Vs 1.8% and 2.4% in 2014-2019E, respectively (World Bank forecasts);
- **Emerging markets maturation.** Decelerating expected growth in emerging markets raises concerns about the long-term underlying prospects, suggesting maturation is approaching. China's GDP growth rate is forecasted to fall from 6.8% (in 2014-2019E) to 5.9% (in 2019E-2020), the lowest ever recorded, signalling the evolution of that country toward a fully-fledged market economy.

The market trends that currently have a significant impact on the AM industry are:

- **International Trade Wars.** The United States recently introduced global tariffs on steel as well as on European autos and Chinese imports;
- **Oil Price.** Brent Crude prices averaged \$64 per barrel in January, closing at \$53/b in February 10, the lowest price since the end of 2018, reflecting market concerns about oil demand;
- **Environmental Issues.** The new regulation coming into force in 2021 dictates a reduction in emissions at 95 gCO₂/km for cars and 147 gCO₂/km for vans;
- **Rare-Earth elements.** A set of seventeen metallic elements, including the fifteen lanthanides on the periodic table, plus scandium and yttrium, are an essential part of many high-tech devices, as well as electric and hybrid vehicles. These metals are very difficult to mine because it is unusual to find them in high enough concentrations for economical extraction.

AM industry is mainly characterized by the production and selling of millions of cars per year at prices affordable to the middle class, in which main players exhibit a large-scale manufacturing capacity (in order to exploit economies of scale), low margins, highly cyclical sales and rely on price competition to gain market shares. Compared to this industry, Ferrari behaves very differently (See Exhibit 11 and Appendix 7). RACE, in fact, pursues a low volume production strategy to retain its exclusivity and lucrative pricing power, as demand for its products always exceeds the supply. Therefore, it exhibits higher EBIT (24.2% in 2018 and 24.3% in 2019) and EBITDA margins (32.6% in 2018 and 33.7% in 2019) than the AM sector's average (5.29% and 11.87% in 2018, respectively) (See Exhibits 13 and 14).

ULTRA-LUXURY CAR MARKET

Worth €9.29bln in 2018, the ultra-luxury car (ULC) market (6% CAGR Revenues in 2015-2018) represents a very thin niche-segment that makes part of the luxury car (LC) market (+4.04% CAGR volumes in FY20E, +5.08% CAGR volumes in 2020E-2023E). It consists of few players with similar features in terms of low volumes (less than 12k units sold per year), high average prices (ca. €200k) and brand exclusivity. The most important ones are: (1) **Ferrari**, (2) **Rolls-Royce**, (3) **Aston Martin**, (4) **Lamborghini**, (5) **Bentley**, (6) **Bugatti** and (7) **McLaren**.

In FY18, the ULC segment exhibited a remarkable 13.4% revenues growth. Net profit amounted to €1.05bln in 2018, with 31.4% CAGR in 2015-2018, and 47k cars sold (+16% compared to 2017). The key factors are:

- **Wealth distribution.** In 2019, the aggregate global wealth summed up to €324bln (+2.6% YOY) and we expect it to grow to €413.3bln in 2024, with approximately 46.8mln millionaires worldwide owning a net worth ranging between \$1mln and \$5mln (+2.4% Vs 2018) (Global Wealth Report 2019). The USA have the highest number of high net worth people (18.6mln – 4.94% CAGR 2000-2019E), which is 4x the number registered in China (2nd in ranking, with 4.45mln people and +28.6% CAGR 2000-2019E) and 6x the Japanese figure (3rd in ranking – 3.02mln – 2.23% CAGR 2000-2019E). While USA represents the largest high-end market, we expect Asia-Pacific area to exhibit the highest potential market growth;
- **New product launches.** According to Ferrari Annual Report, a great portion of the ULC market's demand is driven by the launch of new products. In fact, the market share of its main players fluctuates over time, and strongly depends on the timing of new launches. The introduction of new products tends to raise sales volumes even in case of harsh market conditions thanks to the curiosity, exclusivity and excitement that are usually related to new promotions.

PORTER'S FIVE FORCES ANALYSIS

Within ULC market segment, internal rivalry and suppliers' power represent the two main competitive forces (See Appendix 6). Competition is mostly perceived as "intangible", in terms of desirability, design, customer experience and brand awareness. On the contrary, price competition could be an ineffective strategy for ULC automakers, because it would damage their brand recognition. Suppliers bargaining power is also quite high in this niche-segment since manufacturers need very-high quality raw materials, components and systems, and the low number of highly-qualified suppliers makes the switching process to a new supplier riskier; moreover, suppliers that have been in a long-term relationship with the company acquired specific know-how, essential for the firm (Exhibit 15).

- **Key Drivers:** (i) product range, (ii) geographical presence, (iii) brand recognition, (iv) innovation, (v) pricing power and (vi) low volumes production are the key value drivers of the industry;
- **Race Positioning.** Ferrari positioning (See Exhibit 16) is driven by the strength of the brand and the appeal of the product range in terms of performance, styling and innovation. In 2018, Ferrari held a 22.6% market share of the ULC segment, benefiting from a niche position compared to the volumes of other luxury – but not ULC – car makers (e.g. Mercedes, Audi). Ferrari's revenues represent 30.8% of the ULC market's total revenues (ca. €8220mln), with a 9% 5yr-CAGR. It also exhibits the highest EBIT 5yr-CAGR (18%);
- **Key Competitors Positioning.** As reported above, we identify the potential competitors of Ferrari among the most important players in the ULC segment, after considering their peculiarities. We exclude Bugatti because of its different business model and very limited production. This player exhibits a much lower market share compared to Ferrari, and it has been deferring the production of the 300 pre-booked Chiron models since 2016, producing just 70 cars per year. The identified competitors show almost similar average sales prices (ASP) of ca. €200k – compared to Ferrari's €274k ASP – as well as a low number of units sold with respect to other luxury cars' players. Potential new entrants in this niche-segment would need to overcome impressive entry barriers consisting in capital requirements, excellent quality, brand value, identity consciousness, high R&D costs and efficient customer experience (Exhibit 16).
- **Further potential game changers.** Hybridization, autonomous driving, connectivity and the rise in the number of millennials could also affect such a competitive environment, potentially reshaping some industry dynamics (See Appendix 4).

COMPETITIVE ADVANTAGES

Although the business is a resilient one, not even Ferrari is immune from the effects of large-scale macroeconomic crises. During the deep crisis of 2009, its operating profit was not that dissimilar from the results of luxury companies. However, it continued to exhibit ample profitability, unlike many other car makers. The Company defines its own category of ultra-luxury sports cars and does not compete over prices with the mainstream automakers. Recognized as one of the world's most desirable luxury car marque, Ferrari is now seen more as a luxury brand rather than a car manufacturer. Consequently, we believe the company has durable advantages that might put more distance between itself and its closest competitors down the road:

- **Brand Awareness.** One of the world's most iconic and recognizable brand with a Brand Strength Index (BSI) score of 94.8 out of 100 and an elite AAA+ brand strength rating (Brand Finance, 2019);
- **Product Exclusivity.** A controlled production – Icona, 500 units; *LaFerrari* coupé, 499 units; *LaFerrari Aperta*, 209 units – and distribution model promote unsatisfied demand. Indeed, 5 out of the 10 most valuable cars auctioned in 2019 were Ferrari (See Appendix 5);
- **Low demand elasticity to price.** Ferrari sells vehicles to consumers who do not care about recessions, but just live the emotional nature of their purchasing decision and will buy the high-priced sports cars whatever the economic scenario.

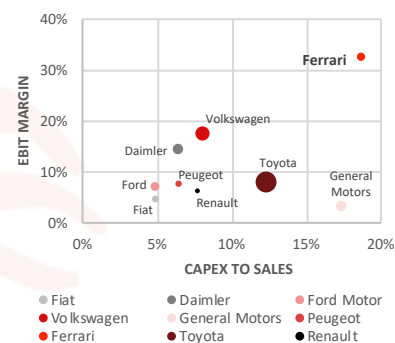


Exhibit 11: EBIT margin vs CAPEX to sales AM and Ferrari (source: team assessment)

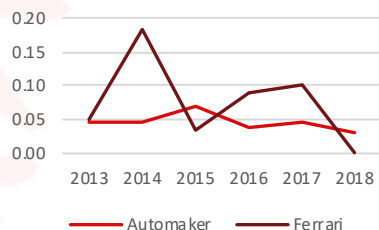


Exhibit 12: Revenues CAGR: Ferrari vs Automaker Market (source: team assessment)

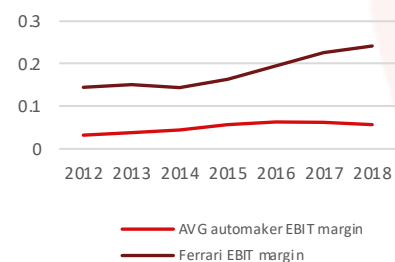


Exhibit 13: EBIT margin avg AM vs Ferrari (source: team assessment)

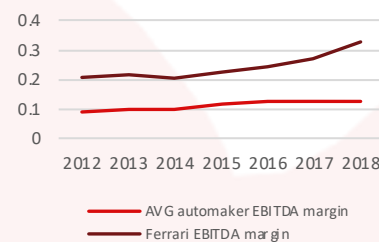


Exhibit 14: EBITDA margin avg AM vs Ferrari (source: team assessment)

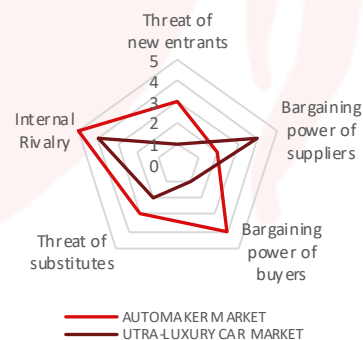


Exhibit 15: Porter's 5 forces analysis (source: company data, team assessment)

Furthermore, the Company benefits from additional unique features:

- **Personalization.** 10 years ago, Ferrari further strengthened the customization service that allows clients to help design their cars, contributing to a well-above average increase in sales (+15%), ASP and operating margins;
- **Planned production often entirely pre-sold,** typical for sports limited edition and special series models. The most recent example is the new Icona Monza SP1 and Monza SP2 entirely pre-sold (i) without requiring any advertising campaign, but simply leveraging on the existing client base and (ii) despite the high price (€1.6mln) being above the usual sport cars average.

In Appendix 7 we also perform a competitive analysis of RACE based on 2018 key financial indicators.

FINANCIAL ANALYSIS

HISTORICAL FINANCIAL ANALYSIS

Ferrari: Robust top-line and earnings

RACE's financial performances fully reflect the company's unique business model: the low volume production strategy coupled with a growing personalization program (demand for its products always exceeds the supply) allow to achieve strong brand awareness and significant pricing power. As a result, in FY14-FY18, the company has achieved: **(1) Impressive revenues growth** (+7.43% CAGR); **(2) Remarkable EPS growth** (+18% CAGR); **(3) Best-in-class EBITDA and EBIT margins** (respectively +7.1% and +7.7% CAGRs).

Divisional revenues: (See Exhibit 18) solid Cars-Spare Parts (CSP), volatile Engines. In FY19, Cars-Spare Parts' division contributes to ca. 78% of RACE's revenues. In the period FY14-FY19 CSP revenues exhibited a 9.64% CAGR reaching €2687.8mln in FY19, when shipment breached the 10k mark for the first time. CSP Revenues were boosted by EMEA and Rest of Apac markets (respectively +11.8% and 15.7% CAGRs in FY14-19), whereas America witnessed a lower demand (+5.8% CAGR in FY14-19). Shipments to China also contributed to push further revenues growth (+7.6% CAGR FY14-19). On the contrary, Engines' revenues (5.3% of total revenues in FY19) have been very volatile in FY14-19, with consistent negative variations in FY15 and in FY18 (-29.73% and -23.78% YoYs, respectively) due to a significant decrease in the sales of engines to Maserati. Revenues from sponsorship, commercial and brand (15% of RACE's revenues in FY19) experienced a moderate growth in FY14-19 (+5.24% CAGR), mainly due to the contribution of Formula One racing activities and brand diversification. 'Other' division further contributed to revenues growth with a +2.75% CAGR in FY14-FY19.

Product mix and price effect drive margins. RACE exhibited rather stable EBIT and EBITDA margins in FY12-FY14 (respectively ca. 14.5% and 20.8%), and an outstanding growth in the next years, hitting the record high of 24.3% and 32.9%, respectively, in FY19. Cars-Spare Parts is the largest contributor of margins growth, thanks to growing personalization programs (driven by the wide range of special series shipments) as well as the very first delivery of the Ferrari Monza SP1 and SP2. On the other hand, RACE has been able to reduce COGS and R&D on revenues, moving respectively from 49.6% to 42.2% and from 19.4% to 18.7% in FY14-FY19, as a result of increased efficiency in line with stronger sell margins.

Strong positive trends in race's profitability: ROIC almost tripled, increasing from 10.89% in FY14 to 30.17% in FY18. According to the DuPont analysis (See Exhibit 19), ROIC growth is mainly determined by the growth of EBIT margin. Moreover, starting from FY18, RACE benefited from a decreasing tax rate. This fiscal benefit further pushed the remarkable net income growth and RACE's ROA (10.81% 5Y average). High operational efficiency coupled with high profitability enabled RACE to generate strong free cash flows growth.

Healthy financials to maximize shareholder returns. Despite very high Capex (18.7% on sales in FY19, See Exhibit 20) RACE generated a 15.4% FCF on sales on average in FY14-19, and plenty of liquidity (in FY14-FY19 cash and equivalent are on average 26.1% of revenues). Thus, cash generation seems not to be a problem. The generous free cash flows sustained business organic growth ambitions and investors' remuneration via dividend distribution (€1.03 DPS in FY18, always increasing since FY15 with a +31% CAGR) and buy-backs (starting in FY18 and up to 2020 buyback).

Resilient capital structure. RACE's capital structure is resilient to large stresses or economic downturns and is reflected in the liquidity and solvency ratios: RACE shows a 0.94x net debt on EBITDA and a 21.83x interest coverage ratio. In addition, the company managed to increase its Quick Ratio in the last four years (+55% 4Y CAGR) demonstrating its ability to manage efficiently short-term assets (especially inventories) and the overall working capital. The good liquidity position is also confirmed by the Cash Conversion Cycle, which is equal to 66.2 days in FY18, showing RACE's ability to convert its investments in inventory into cash in only 2 months.

Patent box. The Patent Box is a policy tool introduced by the Italian Government that allows a 5 years' tax exemption for incomes coming from the use of intellectual property rights (IPRs). Race signed this agreement in September 2018, with retroactive effects from 2015. FY18 income statement incorporates the cumulative tax benefit for FY15-FY18 (ca. €202mln). In FY19, the tax benefit amounted to €97mln, reflecting the combined effects of Patent Box and the deduction related to the hyper and super-depreciation of fixed assets in accordance with tax regulation in Italy.

Ferrari's organic growth. RACE's successful business is the result of 50-years of sustained organic growth. RACE's superb financial performance has never paved the way for any merger or acquisition. As matter of fact, finding other companies exhibiting Ferrari's business characteristics and financial strength would be a demanding effort.

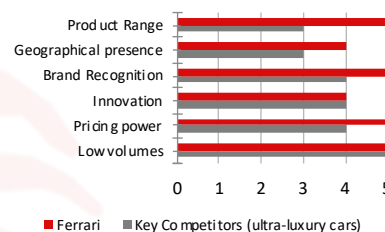


Exhibit 16: ULC Market: competitive positioning (source: team assessment)

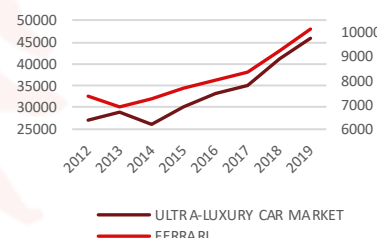


Exhibit 17: Ferrari (right) vs Ultra-luxury car market (left) Volumes (source: team assessment)

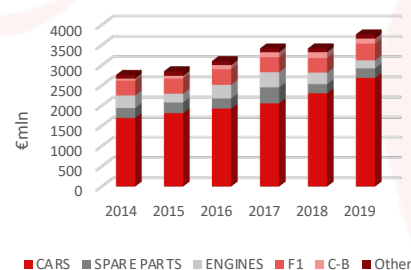


Exhibit 18: Revenues Breakdown by division (source: company data, team assessment)

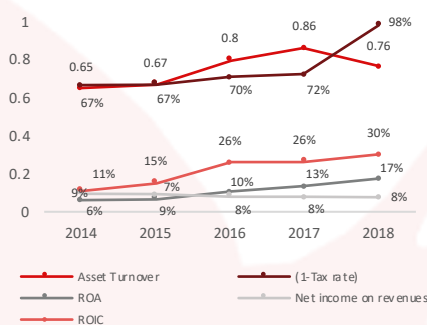


Exhibit 19: DuPont analysis (source: team assessment)

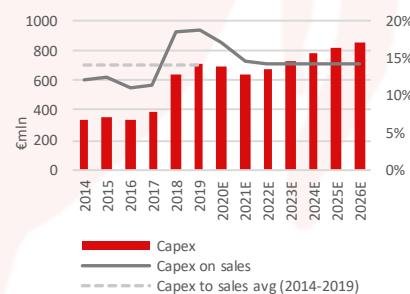


Exhibit 20: CAPEX Evolution (source: company data, team assessment)

FORECAST

We perform detailed revenues' forecast estimates by disentangling RACE's business in its four main divisions: i) Cars-Spare Parts, ii) Engines, iii) Sponsorship, Commercial and Brand (including Scuderia Ferrari) and iv) "Other". We estimate that, in 2020E-2030E, RACE will generate a 5.03% total revenues CAGR, that is well in line with the launch of new cars' models and the development of innovative technologies, further pushed by its increasing pricing power.

Key drives for a solid sales growth. For each business division, we start by identifying the key drivers of the company's organic growth (See Appendix 9).

Cars-Spare Parts. We forecast Cars-Spare Parts' revenues by estimating a function of the volumes sold by Ferrari, taking also into account the increasing trend of the pricing power estimates. Based on our estimates, EMEA will still be the leading market, representing on average 47% (FY20E-30E) of total units of cars sold, whereas Americas and Greater China shipments will fade out (respectively +0.9% and 0.8% CAGR in FY20E-26E). Rest of APAC shipments are expected to grow at +2.0% CAGR, representing steadily the 15.08% on total shipments (FY20E-30E). Such geographical allocation is the result of managing the product phase-in, phase-out across geographies, in relation to the waiting list.

Engines. In our forecasting model, engines' revenues will continue to strongly depend on Maserati's sales. We expect that this division will be facing a low trend until FY24E with a +1.4% CAGR. In FY25E, we expect a slow engines revenues resumption showing a +3.8% CAGR until FY30E.

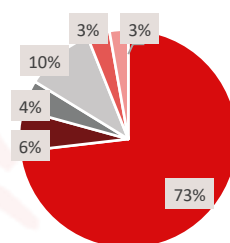
Sponsorship, Commercial and Brand. In the short term we do not forecast any significant variations, since the company is expected to substitute roughly 50% of existing contracts. However, we estimate an impressive growth in the long run (+13% CAGR in FY22E-FY30E), reflecting the numerous initiatives taken to sustain the vibrancy and vitality of Ferrari Brand.

Other. We forecast a steady revenues growth (on average +9% CAGR FY20E-FY26E).

Race drives a stable margins growth. We estimate 2020E RACE's EBIT and EBITDA margins to be 25.3% and 34.7%, respectively, with +3.7% and +1.6% CAGRs in FY20E-30E. The increase in EBIT and EBITDA is mainly driven by strong revenues' growth coupled with a strategy of costs efficiency (See Exhibit 22). More precisely, in our analysis COGS' growth forecasts are determined by estimating a linear regression model based on revenues' growth. According to our estimates, COGS' growth is expected to be lower than revenues growth (respectively, +5.3% vs 6.7% CAGRs in FY22E). Moreover, we estimate that R&D costs will grow less than proportionally (+4.4% FY20E-30E, see Appendix 9). As a result, RACE's margins are forecasted to be higher in the next years, thus reflecting the company's ability to optimize costs and leading RACE to further consolidate its position with respect to its competitors.

Given its high returns, Ferrari continues to master a strong cash flows generation. In FY20E we forecast that FCFO will track €478m, underpinned by Monza (more than €250m). This will be offset by €706m capital expenditures, due to the phasing of some investments between FY19 and FY20. Ferrari expects capex to be around €700m in FY20E. In our model, Ferrari continues to be a low leverage company during our forecast period and free cash flows directly update cash and cash equivalents in line with the Balance Sheet; therefore, Net Change in Cash increases YoY reaching €62.19m in 2021. We estimate that RACE will confirm its strong cash flows generation with FCFO growing at 10.09% CAGR 2020E-2030E, representing on average 78.23% of Net Income (See Exhibit 23).

Financial Health Check. RACE's credit rating (See Appendix 16) is expected to be high and therefore the cost of debt will be low. Moreover, we expect no liquidity concerns, as the level of the current ratio will remain stable to 2.87 (on average) in the long term.



■ Revenues Cars
■ Revenues Engines
■ Revenues C&B
■ Revenues Spare parts
■ Revenues F1
■ Other Revenues

Exhibit 21: Revenues Breakdown in 2020E
(source: company data, team assessment)

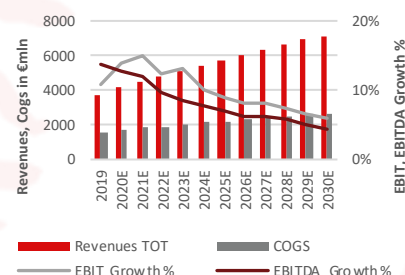


Exhibit 22: Margins evolution
(source: company data, team assessment)

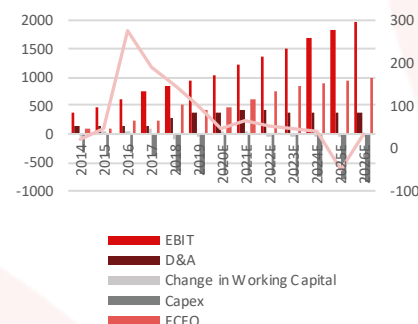


Exhibit 23: Cash flow generation
(source: company data, team assessment)

Million euros	2014	2015	2016	2017	2018	2019	2020E	2021E	2022E	2023E	2024E	2025E	2026E
Revenues	2762	2854	3105	3417	3420	3766	4115	4483	4812	5138	5454	5762	6063
Cars-Spare parts	1944	2080	2180	2456	2535	2926	3262	3623	3897	4145	4361	4617	4886
Engines	311	219	338	373	285	198	185	179	173	170	167	171	174
Scuderia Ferrari	364	372	384	374	362	415	419	405	393	383	376	371	361
Commercial & Brand	53	69	104	121	143	123	135	152	212	291	387	425	447
Other	91	114	99	94	95	104	114	124	137	149	163	179	195
Growth YoY%		3%	9%	10%	0%	10%	9%	9%	7%	7%	6%	6%	5%
Gross Profit	1420	1515	1669	1926	2086	2178	2416	2667	2892	3114	3330	3541	3746
Margin	51%	53%	54%	56%	61%	58%	59%	59%	60%	61%	61%	61%	62%
EBITDA	561	632	739	934	1116	1269	1430	1602	1757	1909	2057	2201	2341
Margin	20%	22%	24%	27%	33%	34%	35%	36%	37%	37%	38%	38%	39%
Pre Tax Income	398	434	567	746	803	875	982	1139	1251	1351	1462	1573	1686
Tax Rate	33%	33%	30%	28%	2%	20%	24%	25%	25%	25%	25%	25%	25%
Net Income	261	288	399	535	785	699	754	858	933	1008	1091	1174	1258
Growth YoY%		10%	38%	34%	47%	-11%	8%	14%	9%	8%	8%	8%	7%
FCFO	82	122	228	399	384	345	504	671	808	770	836	898	958
Net Debt	-576	1933	1380	1147	1127	1192	514	422	289	257	245	230	212
Net Debt/EBITDA(x)	-1.0	3.1	1.9	1.2	1.0	0.9	0.4	0.3	0.2	0.1	0.1	0.1	0.1
Capital Employed (ex goodwill)	2322	1293	1887	2275	2928	2982	3207	3439	3603	3826	4049	4277	4502
ROIC	11%	22%	22%	23%	27%	24%	23%	22%	25%	28%	31%	34%	47%
CAPEX On Sales	12%	12%	11%	11%	19%	19%	17%	14%	12%	14%	14%	14%	14%
NWK On Sales	-2%	-2%	-2%	1%	-1%	-2%	-2%	-1%	-1%	-2%	-2%	-3%	-3%

VALUATION

We issue a **HOLD recommendation** on Ferrari (RACE) with a 1-year target price of €155.21, corresponding to a -2.17% return to the closing price on February 13th, 2020. Our target price calculation is based on a mix of two methodologies: 1) an augmented-Discounted Cash Flow (DCF) to Firm model with a target price of €154.89, and 2) a Multiples Analysis with a target price of €155.85, with weights 2/3 and 1/3 respectively. While the multiples analysis shows the market's perspective on the price of similar assets, the augmented-DCF considers forward looking features regarding the future evolution of the growth and risks of RACE's business. It also uses free cash flows from operations (FCFO), which reduces the influence of subjective accounting adjustments. We decide to underweight the relative valuation approach because of the scarcity of suitable comparables to Ferrari.

Augmented-DCF Valuation. Our augmented-DCF model consists in estimating: A) a sum-of-the-parts (SOTP) DCF to evaluate RACE's organic growth – leading to a fair value of €149.65, and B) an incremental-DCF model to evaluate RACE's additional investment opportunities in the limited edition cars' pillar – leading to an incremental value of €5.24 per share. Summing these two values, we obtain the (DCF) target price of €154.89.

A) Sum-of-the-parts DCF:

This 2-stage model captures RACE's organic growth and relies on the FCFO estimates highlighted in the financial analysis' forecasts. In Appendix 9, in fact, we explain the main drivers of revenues' growth over the next decade with a year-to-year forecast as well as the forecasts of other key financial indicators. The first stage covers the period from FY20 until FY30, during which revenues growth will be characterized by higher rates at the beginning (e.g., +9.26% in FY20) and will slowly decline until FY30 to the long-term growth rate of 3.3%. The second stage starts from FY31 and computes the firm's terminal value by assuming that FCFO will also growth at the constant 3.3% long-term growth rate in perpetuity.

B) Incremental-DCF for a new investment project:

We assume RACE can further increase its value by exploiting profitable investment opportunity in the limited-edition cars' pillar. More precisely, we assume that every 3 years RACE will launch a new limited edition's car model with few units sold (ca. 100-125 per year) at a very high price (ca. €1.5-€1.7m), thus generating higher EBIT and EBITDA margins than organic growth (See Exhibit 26). In the first stage (FY20-FY30) we determine a year-to-year forecast of the operating free-cash-flow stemming from this investment, while in the second stage (from FY31), we assume a 3.3% long-run growth in perpetuity.

INCREMENTAL-DCF									
Million Euros	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
Average Price	1.5	1.5	1.5	1.6	1.6	1.6	1.7	1.7	1.7
Quantity (units)	100	100	100	100	100	100	100	100	100
Revenues	150	150	150	160	160	160	170	170	170
Growth YoY %	7.4%	0.0%	0.0%	6.7%	0.0%	0.0%	6.3%	0.0%	0.0%
COGS	44.9	44.1	43.4	45.7	45.1	44.7	47.0	46.7	46.4
Gross profit	105.1	105.9	106.6	114.3	114.9	115.3	123.0	123.3	123.6
EBIT	49.0	51.8	53.6	59.0	60.6	62.0	67.4	68.6	70.0
Tax Rate	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
EBIT*(1-t)	36.7	38.8	40.1	44.1	45.3	46.4	50.4	51.3	52.4
D&A	9.8	9.8	9.8	10.4	10.4	10.4	11.1	11.1	11.1
Change in the working capital	-0.04	-0.04	-0.04	-0.04	-0.03	-0.03	-0.03	-0.03	-0.03
Capex	-18.3	-18.3	-18.3	-19.5	-19.5	-19.7	-21.0	-21.1	-21.3
FCFO	28.14	30.26	31.59	35.02	36.26	37.12	40.50	41.34	42.20

Company	EV/EBIT 1YF	EV/EBITDA 1YF	P/E 1YF
Hermès 38.3%	25.47	21.88	38.91
Brunello Cucinelli 28.3%	28.99	17.07	37.96
Kering 11.1%	13.82	12.00	18.20
LVMH 11.1%	16.59	11.77	20.91
Moncler 11.1%	16.83	13.83	23.41
Weighted Average	23.20	17.38	32.58
Ferrari	24.11	16.89	30.81
Target Price 1YF			
	154.72	154.93	157.91
Average Target Price = 155.85			

The Weighted Average Cost of Capital (WACC): We discount our FCFO estimates at a WACC of 6.97%. Such value is estimated using a 3% leverage ratio, i.e. $D/(D+E)$, a 1% cost of debt R_d and a levered cost of equity R_e equal to 7.17%. Despite RACE would benefit from an increase in its leverage ratio for tax purposes, we assume that the target $D/(D+E)$ will remain at 3%, in line with the company's low leverage strategy. The cost of debt is computed using an augmented Merton-Black & Scholes model to estimate RACE's spread premium. Instead, the cost of equity is derived from the CAPM formula with a 0.888% risk free rate given by a country-weighted average of the 10Y government bond yields, a 6.3858% equity risk premium given by a country-weighted average of market risk premia, and RACE's levered beta (Appendix 16).

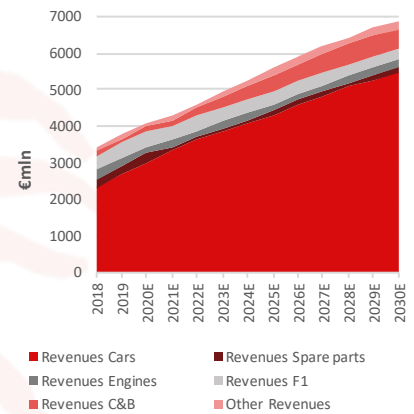


Exhibit 24: Revenues forecast breakdown (source: company data, team assessment)

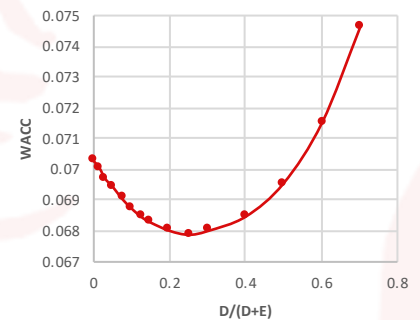


Exhibit 25: WACC vs $D/(D+E)$ (source: team assessment)

IN ORDER:
Exhibit 26: Incremental DCF (source: team assessment)

Exhibit 27: Multiple Analysis (source: team assessment)

WACC = 6.97%

Risk Free Rate	0.888%	Country weighted-average of 10-years government bond
Equity Risk Premium (ERP)	6.3858%	Country-weighted average of market risk premia (equity risk premium + country risk premium)
Beta	0.9847	Linear Regression of RACE returns against MSCI World Index - 2 years at weekly data
Cost of Equity (Ke)	7.17%	Capital Asset Pricing Model: $R_f + \beta * \text{Equity Risk Premium}$
Cost of Debt (Kd)	1%	10Y German Bund Yield (-0.4%) + spread premium (1.4%) computed using an augmented Merton-Black & Scholes model
Leverage ratio: D/(D+E)	3%	Current and target leverage
Tax Rate	25.2%	Italian Tax rate (FactSet)

Multiple Analysis. We also perform a relative analysis to support our RACE valuation using a weighted-average multiple approach. More precisely, in line with the Comparables Selection's analysis (Appendix 17), we first create a basket of comparables companies by assigning a larger weight to Hermès (38.3%) and Brunello Cucinelli (28.3%) because they are more similar to Ferrari, and a lower weight to LVMH (11.1%), Kering (11.1%) and Moncler (11.1%) because these companies possess only some of the unique Ferrari's characteristics. Next, rather than relying on a single multiple (which could give rise to a larger estimation error stemming from possible model misspecification and outliers), we decide to diversify the estimation error and use more multiples in our analysis. Hence, we focus on 1YF EV/EBITDA, 1YF EV/EBIT and 1YF P/E since these are the most reliable multiples. Then, for each multiple, we compute the basket's weighted-average and determine the corresponding target price. Finally, we equally average these three target prices and obtain a final target price of €155.85 (Exhibit 27).

	Company	Business Margins	Brand Awareness	Pricing Power (elasticity to price)	Low-Volumes Production	Size
Group 1	Hermès	****	****	****	****	•
	Brunello Cucinelli	**	***	***	****	**
Group 2	Kering	****	***	***	•	•
	LVMH	***	***	***	•	•
	Moncler	****	**	**	•	**
Group 3	Dior	**	***	**	•	•
	Prada	•	***	**	•	**
	Richemont	•	**	**	•	***
	Burberry	•	**	•	•	**
	Salvatore Ferragamo	•	**	•	•	**
	Hugo Boss	•	•	•	•	**
	Ralph Lauren	•	•	•	•	**

Comparable Scale: **** Highly *** Likely ** Somewhat • Not at All

Exhibit 30: Peers selection Source: team assessment

The **Sensitivity analysis** (See Exhibit 32) highlights the impact of the two important variables of our augmented-DCF model, WACC and long-run growth rate g. Indeed, since the terminal value accounts for ca. 65% of the total enterprise value, we find it interesting to evaluate its influence on the corresponding target price. Moreover, the **Tornado Chart** (See Exhibit 29) shows the effect of a $\pm 5\%$ persistent shock (i.e. every year) to the revenues, COGS, capex, working capital and tax rate on the Augmented-DCF's target price. Our results highlight that the target price is particularly sensitive to shocks to revenues and exhibit little variation from shocks to D&A and working capital. Finally, a **MONTECARLO simulation** (See Exhibit 31) analysis (500,000 scenarios simulations) on the most important parameters of our Augmented-DCF model (such as revenues, COGS, capex and working capital) shows that our HOLD recommendation seems to be well-supported in the vast majority of cases (82%).

Exhibit 28: WACC (source: team assessment)

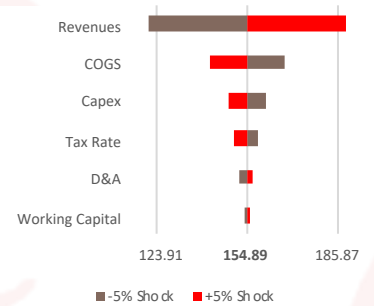


Exhibit 29: Tornado Chart – Augmented DCF (€) (source: team assessment)

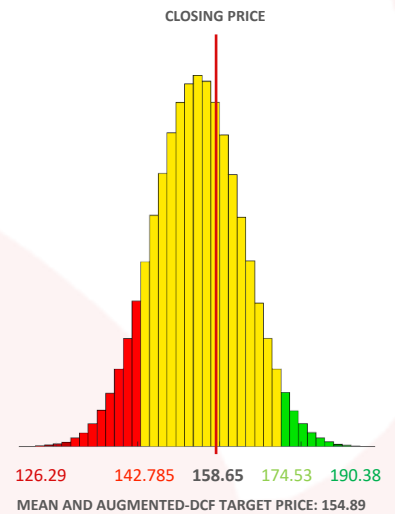


Exhibit 31: Montecarlo Analysis (source: team assessment)

Sensitivity Analysis - Augmented DCF Model										
		WACC								
		6.57%	6.67%	6.77%	6.87%	6.97%	7.07%	7.17%	7.27%	7.37%
Terminal Growth	3.00%	161.42	157.48	153.76	150.24	146.92	143.75	140.76	137.91	135.2
	3.10%	164.64	160.51	156.6	152.92	149.43	146.13	143	140.03	137.2
	3.20%	168.07	163.71	159.61	155.74	152.08	148.63	145.36	142.25	139.3
	3.30%	171.7	167.11	162.78	158.72	154.89	151.25	147.83	144.59	141.51
	3.40%	175.56	170.71	166.16	161.87	157.84	154.04	150.44	147.04	143.83
	3.50%	179.68	174.54	169.73	165.2	160.96	156.97	153.19	149.63	146.26
	3.60%	184.07	178.61	173.52	168.75	164.27	160.06	156.1	152.36	148.82

Exhibit 32: Sensitivity Analysis (source: team assessment)

RISKS

STRATEGY RISKS

A. Brand value. The Company may not succeed in maintaining and strengthening the value of the Ferrari brand, in which it confides to drive demand and profits. However, we do not believe this represents a significant risk for the Company, since it has always been capable of keeping the brand up-to-date and attract over time more and more followers, in particular through its F1 racing team. (See Appendix 19).

B. Growth Strategy. Ferrari's growth strategy requires it to expand its business in countries recognized as having relatively high growth potential. The Company may encounter difficulties to establish its position in such new markets, including more barriers and significant competition. If Ferrari is unable to cope with these risks, its growth scenario could be adversely affected.

C. Technological Changes. Performance cars are characterized by leading-edge technology that is constantly evolving. Although Ferrari invests deeply in research and development (See Exhibit 34), it may be unable to preserve its leading position in high performance car technology and, as a result, its competitive position may suffer. Furthermore, Ferrari is also going through an electrification transition projected to continue in the future (See Appendix 19).

FINANCIAL RISKS

D. Exchange Rate Volatility. The overall Ferrari production is carried out in Italy, but more than 50% of revenues come from non-eurozone countries (ca. 43% in USD, ca. 5% in GBP and ca. 8% in YUAN), this means that it is exposed to market risks deriving from fluctuations in currency and interest rates. The Company seeks to manage this type of risk through financial hedging instruments, but there could not be any assurance that they will be able to do so successfully. In case of a dramatic USD depreciation vs EUR, the potential negative impact on EBIT would be 4.11%, according to our estimation (see Appendix 19).

E. Interest Rate Changes. We estimate that potential increases in interest rates would be negligible. Furthermore, the level of Company's Net Debt is pretty low – we estimate 0.94 Net Debt/Ebitda for FY19 – despite the growth rate of the business. (See Appendix 19)

F. Liquidity. Ferrari is not exposed to the liquidity risk since it generally receives payments 30-40 days after the shipment of the cars and tends to pay most suppliers 90-105 days after receiving raw materials and other components. In 2019 Ferrari had an average total advance from customers equal to 450 million. Moreover, the company would have the possibility to expand its Net Debt/EBITDA ratio from the estimated current level of 0.94.

G. Suppliers and Raw Materials. Ferrari's business depends on a substantial number of suppliers, which provide raw materials, components and systems required for its manufacturing process. In addition, prices for raw materials fluctuate and while the Company seeks to manage this exposure, it may not be successful in mitigating it. We analyze the volatility recorded for the Aluminum price in the last 20 years and its potential impact on the Company's total costs (See Appendix 19). We do not think commodity price fluctuation could be a significant risk for Ferrari.

MACRO RISKS

H. Macroeconomic scenario. Deteriorating economic environment may affect disposable incomes and reduce consumer wealth and confidence, affecting client demand, particularly for luxury goods. This could cause a reduction in Company's profitability and put downward pressure on its prices and volumes. In addition, higher taxes may be more likely to be imposed on certain luxury goods, including cars. However, Ferrari's sales have historically been resilient in periods of economic deterioration.

I. Brexit. Approximately 10% of Company's sold cars are UK-based, generating ca. 5% of total revenues (ca. €188M). Despite the end of UK EU membership, Brexit uncertainty is still likely to hang over the UK economy for at least the next year. This in turn will continue to weigh on business investment. However, Ferrari luxury cars are intended for both wealthy people and fans of the brand, who are less sensitive to changes into economic environment (See Appendix 19).

J. Trade War. President Trump's protectionist policies may have a significant impact on Ferrari's business, considering that ca. 13% (ca. €490M) of revenues come from the USA, since they imply the imposition of export duties, not only directed to China, but also to other European countries. Raised tariffs between the US and Europe increase selling prices and dampen the demand for series cars. However, since Ferrari's customers are high-net-worth people with low sensitivity to changes in prices and taking into consideration their loyalty (existing customers buy 60% of the cars), we expect duties on cars to cause a small impact on Ferrari's sales (See Appendix 19).

	Risk	Category
A	Brand Value	Strategy
B	Growth Strategy	Strategy
C	Technological Changes	Strategy
D	Exchange Rate Volatility	Financial
E	Interest Rate Changes	Financial
F	Liquidity	Financial
G	Suppliers and Raw Materials	Financial
H	Macroeconomic Scenario	Macro
I	Brexit	Macro
J	Trade War	Macro
K	Emerging Markets	Macro
L	Shareholder Pressure	Corporate Regulatory
M	Law and Regulation	Corporate Regulatory
N	The Concorde Agreement	Corporate Regulatory

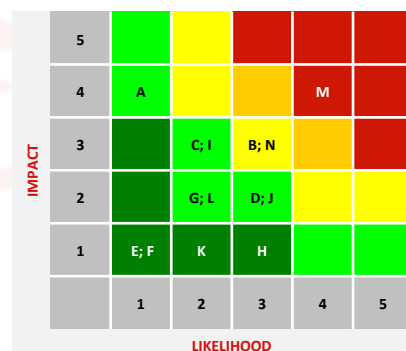


Exhibit 33: Risk Inventory and Heat Map
(source: team assessment)

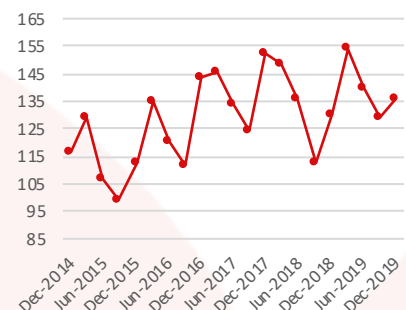


Exhibit 34: Research & Development (€M)
(source: team assessment)

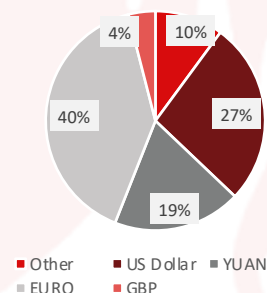


Exhibit 35: Net Revenues by Currencies
2018 (source: FactSet, team assessment)

K. Emerging Markets. Ferrari operates in several emerging markets and it has experienced increasing demand in recent years in China and the Middle East, due to continued economic growth. The Company is unable to predict the level to which the development of these markets will extend – in fact, the extensive efforts to contain the Coronavirus could cause GDP growth in China and emerging Asia to slow sharply at least in Q1 2020, in our view. This variable must be carefully monitored going forward but not overstated, given that just 7.5% of total revenues (ca. €282M) are generated in China.

CORPORATE AND REGULATORY RISKS

L. Shareholder Pressure. Exor has an important influence over matters submitted to a vote of shareholders, such as approval of the annual financial statements, declarations of annual dividends, election and removal of the board members and capital increases. The interests of Exor and Mr. Piero Ferrari may in some cases diverge from those of other shareholders. However, they have already entered into a shareholders' agreement pursuant to which they have accepted to refer in order to form a common view on the items on the agenda of shareholders' meetings.

M. Law and Regulation. Ferrari is subject to continuously evolving laws, regulations and policies. In Europe and in the United States, legislation is driven by environmental, fuel economy, vehicle safety and noise emission concerns. Evolving regulatory requirements could significantly affect the Company's product development plans and may limit their sales in terms of geographical location, amount and models of cars. We can reasonably assume that the number and magnitude of these regulations, as well as their effect on the cost structure, could increase in the future.

N. The Concorde Agreement. Changes in F1 rules usually cause higher R&D costs or lower revenues sharing. The new Concorde agreement is at an early stage and a lot of work remains to be done before achieving a final version (see Appendix for further details). Furthermore, F1's new owner Liberty Media is willing to limit the bonus payments' inequality as there is a close correlation between the teams' budgets and their chances of success. However, Ferrari has retained its right to veto Formula 1 rules as part of the new Concorde Agreement, whose draft is due in 2021.



Exhibit 36: EU/US DOLLAR FX Spot rate
(source: FactSet, team assessment)

20 years Historical Series	Max Positive Fluctuation of the Price of Aluminum	Impact on Costs of Sales
Monthly basis	16.76%	4 bps
Annual basis	30.81%	8 bps

Exhibit 37: Price of Aluminum
(source: team assessment)

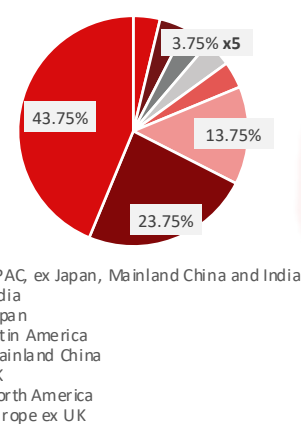


Exhibit 38: Global Revenues Exposure 2019
(source: team assessment)

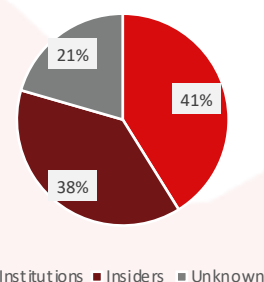


Exhibit 39: Type of shareholders
(source: team assessment)

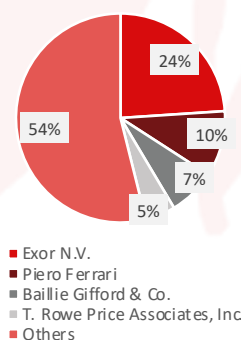


Exhibit 39: Main Shareholders
(source: team assessment)

GOVERNANCE

CORPORATE GOVERNANCE

Legally headquartered in Amsterdam (Netherlands) since 2013, Ferrari N.V. adheres to the Dutch Corporate Governance (CG) Code and is compliant with most of its principles and best practices provisions (see Appendix 20). We also provide a scorecard model to assess whether the company's CG respects the principles established by the Organization for Economic Cooperation and Development (OECD). Our score highlights a high quality of RACE's CG (87.9%), except for the issues related to the potential over-control of majority shareholders (See Exhibit 40). Thanks to the loyalty voting rights regime (double vote for long-term shareholders), in fact, Exor N.V. (represented by Mr. John Elkann) and Mr. Piero Ferrari jointly possess almost 50% of voting rights. Such potential over-control, however, is counterbalanced by a series of measures compliant with best practices.

Board of Directors: It is currently composed by the Chairman (John Elkann), the CEO (Louis C. Camilleri), the Vice Chairman (Pietro Ferrari) and seven independent-and-non-executive members. The corporate structure includes three internal committees: i) Audit (A), ii) Governance and Sustainability (GS), and iii) Compensation (C). The BoD's academic backgrounds are complementary and range between engineering on one hand, and business, economics and law on the other. The composition of the BoD follows a series of eligibility criteria, such as gender, age and professional carrier in order to better pursue the valorization of diversity (See Appendix 20). In our view, such composition and functioning of the BoD (including also high attendance at the meetings of the BoD and its committees) provides positive signals to the market and represents reassuring factors for the investors.

Remuneration Policy: The remuneration scheme further aligns managers, company and investors interests by establishing: (i) a mix of fixed remuneration coupled with short/long term incentives plans (STIP/LTIP) for executive directors, (ii) a fixed compensation that does not depend on the financial results for non-executive directors, who do not have day-to-day responsibility. This system allows to retain highly qualified directors in the long term, to correlate personal compensation and profitable growth as well as act in the best interests of shareholders.

CORPORATE SOCIAL RESPONSIBILITY & SUSTAINABILITY

Ferrari has promoted several social initiatives over the years, complying to its Code of Conduct (such as the launch of two after-school facilities in Japan after the Tōhoku Earthquake and the reconstruction of a school in Italy after the Amatrice earthquake), and has recognized the crucial role of people in its business since 1990 (with the launch of the "Formula Uomo" and "Formula Benessere" programs, aimed at preserving the well-being of the work environment). Moreover, the company has made significant environmental efforts in the production process of its luxury cars in order to pursue environmental sustainability (27% reduction in CO2 emissions in the last decade; more than 90% of the purchased electric energy is renewable, trigeneration plant). Finally, Ferrari publishes a Sustainability Report since 2017.

APPENDIX 1: BUSINESS DESCRIPTION

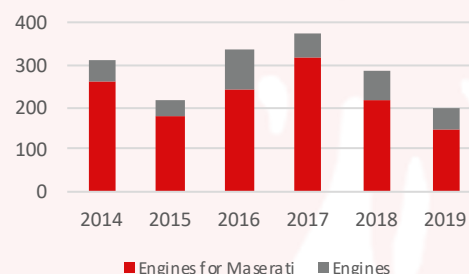
CARS. In this Appendix we describe in more details the other Ferrari production line-ups, in addition to the Strategic Pillars:

- **Racing Cars:** these cars participate to the GranTurismo Championship.
- **Ferrari Challenge:** the V8-488 Challenge EVO car is produced only to make the customer participate to the Ferrari Challenge Trofeo Pirelli, the most remarkable Mono-brand championship.
- **XX Programme:** Born by the ingenious and idea of involving a group of special customers in the development of the Ferraris of the future, this program uses limited edition cars developed exclusively for the track.

Ferrari currently sells:

SPORTS	GRAN TURISMO	ICONA	FUORISERIE AND ONE-OFF	SPECIAL SERIES MODELS
 V8-F8 Tributo	 V8-Portofino	 V8-Monza SP1	 V8-P80C	 V8-488 Pista
 V8 Hybrid-SF90 Stradale	 V8-GTC4 Lusso T	 V8-Monza SP2	 V8-Ferrari J50	 V8-488 Pista Spider
 V12-812 Superfast	 V8-Roma			
 V8-F8 Spider	 V12-GTC4 Lusso			
 V12-812 GT				

Engines Production. Ferrari has been producing **V6, V8 and V12 engines for Maserati** since 2002, according to a vertical structure starting from the casting of aluminum in its foundry (roughly 90% of the engine is composed by aluminum) and ending with the final assembly and testing of the engine. V8 engines are variants of Ferrari families of engines (in 2018, the newest edition of the V8 turbocharged engine mounted on the 488 Pista won the title of “Engine of the Year”) and are mounted on Maserati’s highest performing models, such as the Quattroporte, Ghibli and Levante (turbo engines), and the GranTurismo and the GranCabrio (aspirated engines). V6 engines production for Maserati is disciplined by a multi-year arrangement in place until 2022. CEO Mr. Camilleri reported that such agreement is not expected to be renewed afterwards to better focus on the company’s core business.



Source: team assessment

Personalization and Tailor Made Programmes. Ferrari’s production is characterized by a growing level of personalization for its clients. The first layer features highly customizable interior and exterior options. The second layer of customization is represented by the “Special Equipment” programs. Ferrari specialists guide clients through the creation of a customized car, choosing among a wide catalogue of special items such as: different types of rare leathers, custom stitching, special paints, special carbon fiber, and personalized luggage sets designed to match the car’s interior. The “Atelier” and “Tailor Made” programs provide two additional levels of personalization in accordance with their clients’ expectations. In particular, the “Tailor Made” program assists clients in selecting and applying virtually any specific design element chosen. Clients benefit from a large choice of finishes and accessories in an array of different materials (ranging from cashmere to denim), treatments and hues. Ferrari also offer three collections inspired by Ferrari’s own tradition: Scuderia (taking its lead from Ferrari’s sporting history), Classica (bringing a modern twist to the styling cues of Ferrari’s signature GT models) and Inedita (showcasing more experimental and innovation-led personalization).

Scuderia Ferrari. Scuderia Ferrari S.p.A is the company's racing division that competes in Formula One Racing Championship, the highest class of single-seat auto racing. It is considered an icon of F1: starting from its launch in 1950, in fact, it has participated to all F1 world championship and it is the most successful F1 team.

THE MOST SUCCESSFUL TEAM IN THE RACING HISTORY

								
ALBERTO ASCANIO	JUAN FANGIO	MIKE HAWTHORN	PHIL HILL	JOHN SURTEES	NIKI LAUDA	JODY SCHECKTER	MICHEAL SCHUMACHER	KIMI RAIKKONEN
1952-53	1956	1958	1961	1964	1975-77	1979	2000-04	2007

F1 2019 CAR AVERAGE PART COST



Source: company data, team assessment

RACE has received the largest share of Formula 1's prize money despite more than 10 years without winning a championship. Specifically, last 3 years' participation to Formula 1 Championship has entitled Ferrari to achieve different prizes, as shown in the table below:

RACE's Prizes (€M)		2016	2017	2018
LINE 1	Fixed share of revenue paid to any team that has been in the top 10 of the championship in two of the past 3 seasons	30.2	32.5	22.4
LINE 2	Paid on a sliding scale based on a team's finishing position in the previous championship	48.2	37	36
Constructors Championship Bonus (CCB)	Guaranteed regardless of the teams' race results and is split between Ferrari, McLaren and Red Bull Racing	31.6	31.6	27
Long Standing Team (LST)	Race gets its own dedicated prize for being F1's longest-standing team	63.1	63.1	47.2
TOTAL		173.1	164.2	132.6

Source: team assessment

Concorde Agreement. F1's new owner Liberty Media is discussing whether to introduce much more fairness in prize money, which could be a benefit for smaller teams but could also mean the end of Ferrari's bonus. Changes are not expected to come soon as they should be included in the renewal of the Concorde Agreement (CA) which is scheduled for the beginning of 2021. Such agreement (signed for the first time in 1981 by all F1 teams in Paris, France) is a contract between the Fédération Internationale de l'Automobile (FIA), F1 teams and the Formula One Group which dictates the terms by which the teams compete in races and how the television revenues and prize money are divided.

Sponsorship. As the most successful F1 team, Ferrari shows its exclusivity through the huge request for sponsorship. In 2018 Scuderia Ferrari exhibited the largest number of sponsors (12), the highest sponsorship revenues (ca. €230mln) and the top-paying title sponsor (Mission Winnow with ca. 117mln) (see Exhibit. X)

Costs. The amount of costs strongly depends on F1 regulations' changes to racing engines (in 2021 a new version of 1.6 liter V6 engine will be introduced) and cars. RACE F1 cost structure is shown in table below:

FERRARI SPONSOR F1 (€M)	2014	2015	2016	2017	2018
Winnow	116.8	116.8	116.8	116.8	116.8
Shell	26.1	26.1	26.1	26.1	26.1
UPS	25.7	25.7	25.7	25.7	25.7
Kaspersky	21.2	21.2	21.2	21.2	21.2
Lenovo	0	0	0	0	14.4
Ray Ban	0	11.3	11.3	11.3	11.3
AMD	0	0	0	0	3.9
Hublot	2.7	2.7	2.7	2.7	2.7
Weichai	2.3	2.3	2.3	2.3	2.3
Pirelli	2.3	2.3	2.3	2.3	2.3
OMR	1.4	1.4	1.4	1.4	1.4
Mahle	1.4	1.4	1.4	1.4	1.4
TOTAL	199.9	211.2	211.2	211.2	229.5

Source: team assessment

In 2021, for the first time ever, Formula 1 will introduce spending restrictions to make the sport more sustainable. The annual cost cap will be set at \$175mIn per team, and applies to anything that covers on-track performance- excluding marketing costs, drivers' salaries, and top three personnel at any team salaries. Spending power tends to have a direct correlation on competitiveness in F1. The F1 cost cap will end the growing spending gap between F1's big spenders and those with fewer resources, creating a split between being big and being successful.

F1 Cost Structure		2016	2017	2018
Staff Costs	Costs faced by Ferrari to pay Formula 1 racing team staff (engineers, pilots, etc.)	93.4	93.4	93.4
Management Costs	Management and logistics costs faced by Ferrari in Formula 1	63.1	63.1	63.1
R&D	Ca. 75% of Ferrari's R&D costs are for Scuderia Ferrari racing team	462.2	492.8	482.3
Total Amount	Sum of the costs meet by the company for racing in Formula 1	618.7	649.3	638.3
Income	Formula 1 Ferrari's income that depends on Sponsors and Prizes	384.3	373.5	362.2

Brand Diversification. Ferrari's business is characterized by a great brand diversification, with a strong focus on "Made in Italy". Ferrari's Accessories can be divided in three different strategic pillars:

- Brand extension for brand lovers: a refined collection of products embodying Ferrari's DNA;
- Entertainment for fans: Ferrari Entertainment Universe leveraging unique racing roots
- Car adjacencies for Ferrari car owners, exclusive luxury products and services to complement the Ferrari experience (e.g. the new opening of a refined restaurant with the Michelin-starred chef Massimo Bottura, in late 2020).

Moreover, in 2020 is expected the launch of Ferrari Esports Platform, where the Ferrari Driver Academy team will be competing in F1 Esports Championship. Being based on royalties, Ferrari legend and brand are supported by licensing agreements with a selected number of partners to develop the merchandising sold in the Ferrari stores and to allow for the creation of Ferrari Museums and theme parks. It also licenses the brand to a limited number of producers of luxury and lifestyle goods – e.g. Ferrari is going to conclude a manufacturing agreement with Giorgio Armani Group.

The company opened its first Ferrari Store (in Maranello) in 2002, and, in 20 years, it has reached approximately 50 retail outlets worldwide, including Asia, Europe, USA, UAE. Since January 2014, Ferrari has two museums, which represent the history and the future of this business. Finally, Ferrari theme based licensed attractions will be expanded: Ferrari World Abu Dhabi is the first Ferrari theme park as well as the largest venue of its kind in the world, offering visitors an intense multi-sensory experience. The first theme park in Europe is at PortAventura, Tarragona, on the Costa Daurada in Catalonia, Spain. Ferrari Land offers 11 attractions for the whole family, recreating the true excitement and adrenaline of this powerful company.

APPENDIX 2: AUTOMAKER MARKET & LUXURY CAR MARKET

We estimate the overall Automaker market growth by performing Ordinary Least Square (OLS) regression using three indicators as predictors: Steel Production, Nominal Global GDP growth and Urban Population. We exclude aluminum price since the latter does not significantly affect RACE's car revenues. On the other side, we estimate the Luxury Cars industry growth by an OLS regression using Steel production and HNW population as regressors. Our dependent variables are the volume CAGRs of the automaker (AM) and luxury cars (LC) markets, respectively. The results of our regressions highlight meaningful parameters and acceptable R².

CAGR Automaker market		
Line	R ²	CAGR FY20
$y = -62032651 + 7,68 * x_{\text{SteelProd}} + 0,035 * x_{\text{Pop}} + 89627837 * x_{\text{GDPgrowth}}$	0.981	5%

CAGR Luxury car market		
Line	R ²	CAGR FY20
$y = -39145 + 0,032 * x_{\text{SteelProd}} + 0,001 * x_{\text{HNWIPop}}$	0.884	4.04%

	AM share	Real GDP FY20 per country	CAGR FY20 AM
Europe	33.3%	1.7%	2.95%
NAFTA	22.3%	1.7%	
Asia ex Japan	36.1%	5.3%	
Japan	5.6%	0.5%	
ROW	2.7%	3.0%	

All Tabs Source: team assessment

APPENDIX 3: COMPETITORS' LUXURY SUV PRODUCTION VOLUMES

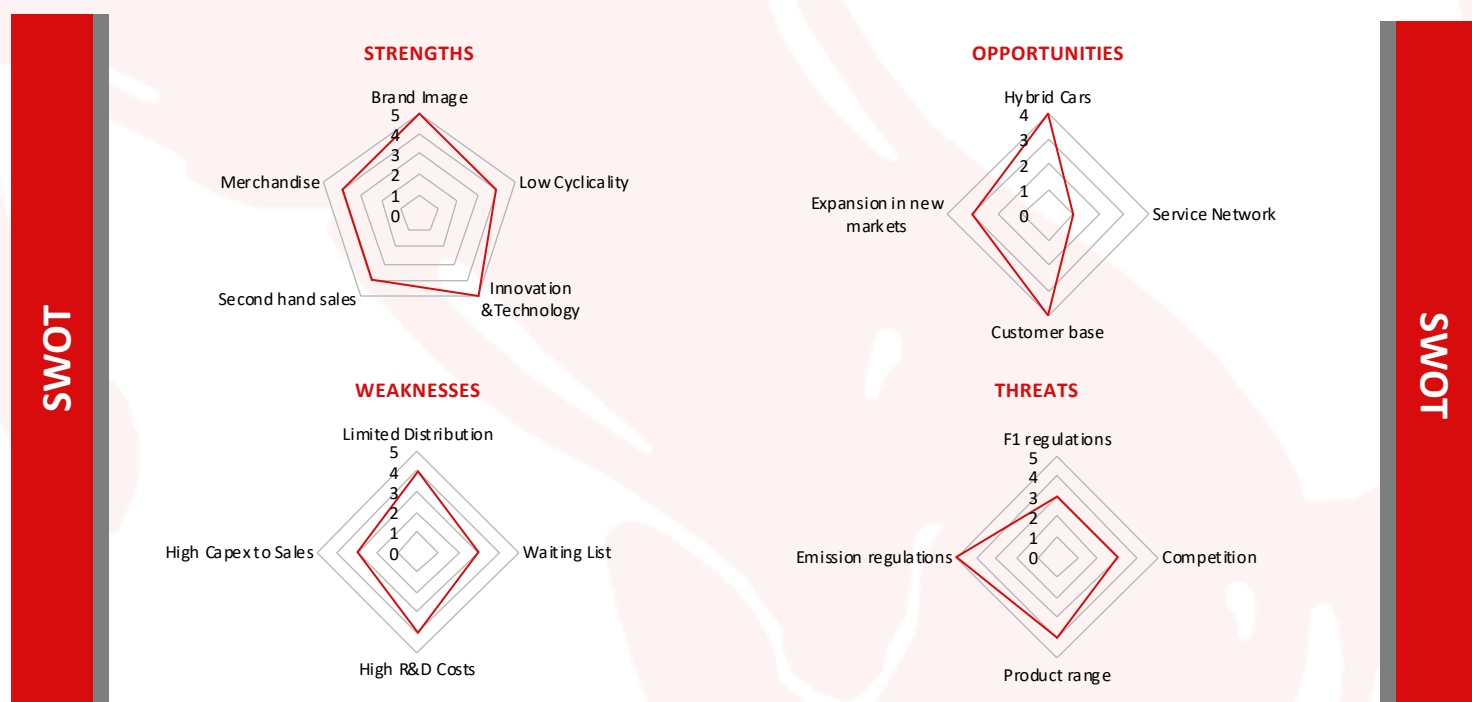
Car Manufacturer	Model	2015	2016	2017	2018	2019E	2020E	2021E	2022E
Aston Martin	DBX	•	•	•	•	•	3000	4500	4500
Bentley	Bentayga	96	5586	4849	5072	4250	4100	4000	4500
Lamborghini	Urus	•	•	121	2565	5500	6000	5750	5500
Rolls Royce	Cullinane	•	•	•	544	2500	2500	2500	2250
Ferrari	Purosangue	•	•	•	•	•	•	•	1500

APPENDIX 4: SWOT ANALYSIS

We decide to carry out a SWOT analysis by assigning a score between 1 (very low) and 5 (very high) to each driver according to the characteristics of Ferrari. The grades in each category are displayed in the following graphs and tables:

STRENGTHS		Score
Extremely strong brand awareness, with low demand elasticity to price		5
High level of protection against cyclicalities		4
Innovation & technology are key drivers behind every product		5
A dedicated pre-owned program to facilitate second hand sales, creating long-standing customer relations		4
Ferrari merchandise like perfumes, jackets, replica models are extremely popular		4
Total		22
WEAKNESSES		Score
Limited distribution and service network across the world for Ferrari cars		4
Due to their "waiting list" model, they lose potential new clients		3
FCFO penalised by high R&D costs (last 5 years avg 19.4% on sales)		4
High Capex to Sales (last- 5 year avg>13%)		4
Total		15
OPPORTUNITIES		Score
Hybrid and Future Car segment		4
Increasing the distribution and service network		1
Enlargement of customer base		4
Expansion of the brand due to the entrance into new markets like India		3
Total		12
THREATS		Score
Changes in F1 regulations		3
Tough competition from other iconic super car brands such as Lamborghini and others		3
Competitors are expanding their product range		4
Emission regulations can induce additional costs		5
Residual value trends		2
Total		17

Source: team assessment



Source: team assessment

Further potential game changers. Hybridization, autonomous driving, connectivity and millennial generation also affect the LC and ULC markets, potentially reshaping part of their key drivers. In more details:

- **Hybrid and Electric Cars.** Last year recorded 18% drop in diesel car sales and 12% increase in petrol cars, while electric cars sales recorded 1.26mIn, up by a huge 74% (Exhibit). According to PWC, electric vehicles will remain a minority of new car registrations until 2030, when they estimate they will count for ca. 50% of Chinese volumes, 44% in the Euro Area and just 20% in the United States;
- **Autonomous driving.** ULC manufacturers are developing autonomous technologies (level 4 and level 5 of the driverless technology), which will allow people to delegate driving and benefit from regained time.
- **Connectivity.** The totality of the new cars will probably be web-connected as early as 2022. The potential of the V2X technology market is expected to reach \$14.8bn and luxury automakers need to find innovative ways to propel car connectivity in order to gain sizable market shares.
- **Rising Millennials:** Product innovation and exclusivity are key drivers to influence Millennials' purchasing behavior. Generation Z, despite being a smaller portion of the market, is already demonstrating highly differentiated preferences. The new consumers are actually (i) more "individualists", i.e. looking for products that convey their unique personality; (ii) more willing to get a unique customer experience; (iii) more logo-driven, i.e. they exhibit little brand loyalty.

APPENDIX 5: 10 MOST EXPENSIVE CARS SOLD AT AUCTION IN 2019 (Goodwood.com)

	BRAND	MODEL	PRICE	AUCTION HOUSE
	McLaren	F1 "LM - Specification" (1994)	\$19.805.000	RM Sotheby's
	Alfa Romeo	8C 2900 (1939)	\$16.745.600	Artcurial
	Ferrari	250 GT LWB California Spider	\$9.905.999	Gooding & Co
	Lamborghini	Veneno Roadster (2014)	CHF 8.280.000	Bonhams
	Ferrari	250 GT SWB (1962)	\$8.145.000	RM Sotheby's
	Ford	GT40 (1965)	\$8.650.000	RM Sotheby's
	Ferrari	250 GT SWB (1963)	\$7.595.000	Gooding & Co
	Pagani	Zonda Aether (2017)	\$6.812.500	RM Sotheby's
	Ferrari	250 GT Serie 1 Cabriolet (1958)	\$6.800.000	Gooding & Co
	Ferrari	F2002 F1 (2002)	\$6.643.750	RM Sotheby's
Most expensive car ever auctioned off				
	Ferrari	Ferrari 250 GTO (1962)	\$48.400.000	Rm Sotheby's

Source: team assessment

APPENDIX 6: PORTER'S FIVE FORCES ANALYSIS

Internal Rivalry						
	Concentration	Size of Competitors	Industry Growth	Product Differentiaton	Diversity of Competitors	Exit Barriers
AM	Concentration is high. Although, different brands target different market segments, they overlap.	The market is dominated by Volkswagen (ca. 12,2% of market share), Renault-Nissan (11,2%), Toyota Groups (11%). The marriage between PSA and FCA will create the 4th group, with 9.6% of global market share.	The AM market is expected to have a global growth, with 5% CAGR 2018-2020E; mainly driven by the increase in urbanization and customer increased wealth.	In the market, differentiation is low-moderate and mainly based on customization and standardized technological improvements.	Players are well diversified in terms of geography, but not in product specialization. Differentiations can be achieved through the development of global distribution networks or "customer experience".	Medium-high fixed costs and moderate-high specialized assets are the main exit barriers characterizing the AM industry.
ULCM	Concentration is globally moderate. Companies can be divided into 3 main luxury layers: absolute, aspirational and affordable luxury.	It is characterized by the presence of few large players (Ferrari, Lamborghini, Rolls-Royce, Bentley, Aston Martin and McLaren).	The market is expected to grow (ca. 4,04% CAGR in 2018-2020E, team estimates) mainly driven by new launches, rise of the HNW population, innovation.	Product differentiation is medium-high. Due to the significant differences in brand perceptions, each product is unique but, usually, different models have similar features.	Players are well diversified in terms of geography, characteristics and identity. Different brands set different prices based on the characteristics of the product and the prestige each is perceived to be.	Very specialized assets and high fixed costs are the main exit barriers characterizing the ULCM

Continue to the next page...

Buyers Power							
	Buyer concentration	Switching costs	Backward Integration	Importance to buyers			
AM	Buyer concentration is very high. Small individual buyers are common, but there are corporations and government agencies that buy fleets of vehicles.	There are no big costs involved in switching to another brand. The buyers are price sensitive mostly and would switch to another brand that offers a better product at lower price.	Backward integrations is unlikely for two main reasons: (i) Automaker are increasingly relying on outsourcing to reduce fixed costs and become more flexible; (ii)Automaker focus on the aggregation of high-quality parts rather than producing those parts by themselves	When strong relationships with customers are built, definitely their importance to buyers rise. Customization and high-quality after sales services can be the key to increase it.			
ULCM	Buyers concentration is very low. The main target is upper class.	Buyers are not sentisitive to variations in prices and are more loyal to the brand	Luxury and ultra-luxury car brands usually take vertical ownership of their supply chains to protect their competitive advantage and to defend themselves against future rising supply costs.	The perceived uniqueness and exclusivity of each product makes them important to buyers.			
Suppliers Power							
	Supplier Concentration	Product Differentiation	Suppliers Relative Size	Dependence on the industry	Forward Integration		
AM	Supplier concentration is high for raw materials and semi-finished products.	Product differentiation is extremely low for raw materials as steel, aluminum, glass and low for semi-finished products . Raw material is always available in plenty and switching from one supplier to another is not difficult for automakers.	Most of suppliers are small players. Only few of them are significant in size.	Raw materials and semi-finished products suppliers does not depend on any specific market because they serve a wide range of industries and markets.	Most of suppliers are pure players and have no prospect to acquire any segment of their customers.		
ULCM		Product differentiation is pretty high for raw materials as steel, aluminum, glass and semi-finished products . Switching from one supplier to another is can be difficult, considering the importance given to quality and costs.					
Threat of New Entrants							
	Scale Economies	Capital Requirements	Expertise Requirement	Distribution Channels	Cost Advantage	Legal & Regulatory Barriers	Defence of Market Share
AM	Mass production and scale-related cost reduction are one of the main profitability drivers in the market.	Heavy investments (mainly for set up the manufacturing facilities, distribution network and hiring skilled staff) are necessary for effectively entering in both industries, with a highest level required for ultra-luxury car makers.	Incremental innovation and the level of technical know-how make expertise and know-how crucial in the AM market.	Access to distribution channels are an entry barrier in both markets. However, existing relationship with customers and market proximity could be more relevant.	Incumbents can have several types of cost advantages difficult to be replicated for new entrants. Examples include proximity to customers, scale economies (for AM), preferential access to distribution channels and existing partnership with distributors.	Legal requirements have grown in recent years, creating one more barrier to entry (i.e. environmental sustainability). In addition, some governments have applied high import taxes to discourage foreign brands.	Market share defence is mainly based on the importance of brand image and reputation.
ULCM	As auto manufacturers, they could exploit economies of scale. However, luxury car manufacturers often produce unique goods due to customer requests.		Incremental innovation and the level of technical know-how make expertise and know-how crucial in the Luxury and ultra-luxury Cars market.				
Threat of Substitutes							
	Number of Substitutes	Relative Price	Relative Quality				
AM	There are several substitutes and alternative modes of transportation (planes, taxis, trains, buses)	Alternative modes of transportations are cheaper than owning car. However you do not need to worry for the maintenance.	None of the alternatives can provide the kind of accessibility and convenience that owning an automobile does.				
ULCM	There are virtually no substitutes for luxury cars, even though non-luxury cars offer the same functionality as most ultra-luxury cars. Non-luxury brands aren't considered as substitute to the luxury brands.	The no-luxury cars are cheaper in price, but they don't evoke the same kind of elite status symbol that genuine luxury cars provide.	The non-luxury cars can't be similar in quality to luxury cars.				

Porter's Five Forces Analysis
Source: team assessment

APPENDIX 7: COMPETITIVE ANALYSIS

To better understand RACE positioning and performances, we perform a competitive analysis on 2018 key financial indicators. RACE's business model is characterized by high margins (EBITm is 24.18% whereas EBITDam is 36.62%) and strong capital profitability (ROIC is 30.17%), well in line with the Luxury industry average (21.76% ROIC, 25.57% EBITm and 29.57% EBITDam), and quite far from those of the Automaker industry (6.29% ROIC, 7.52% EBITm and 15.29% EBITDam). Similarly, RACE's financial leverage (Net Debt/EBITDA is 1.01) is closer to the average value of the luxury industry (0.71) rather than the one shown by automakers (4.61). On the contrary, the company has a 18.66% Capex/sales, denoting a high level of investments to support its organic growth, in line with typical car manufacturers. Finally, the company's business strategy and model (brand awareness, low volumes production strategy, pricing power and business margins) more closely resemble exclusive luxury products companies.

2018	Revenues (€mln)	Capex/Sales	EBIT MARGIN	EBITDA MARGIN	ROIC	Net Debt/EBITDA
Ferrari	3420	18.66%	24.18%	36.62%	30.17%	1.01
AUTOMAKER INDUSTRY						
Toyota	246,561	12.25%	8.02%	13.92%	8.73%	3.33
Volkswagen	235,850	8.04%	8.44%	17.56%	5.79%	3.75
Daimler	167,360	6.39%	5.61%	14.50%	4.90%	4.93
BMW	97,480	7.98%	9.22%	17.88%	3.40%	4.32
General Motors	147,050	17.34%	3.32%	12.26%	7.55%	4.22
Honda	128,894	37.27%	5.43%	14.89%	9.16%	1.99
Ford	147,792	4.86%	1.97%	7.15%	2.68%	10.50
Aston Martin	1,320	28.32%	11.76%	20.88%	-	2.44
Harley Davidson	5,270	37.34%	13.92%	18.55%	8.12%	5.97
Average automaker industry	130,842	17.75%	7.52%	15.29%	6.29%	4.61
LUXURY INDUSTRY						
Brunello Cucinelli	5,530	7.80%	13.76%	18.41%	16.11%	0.25
Hermès	5,966	5.23%	35.00%	38.60%	26.52%	1.49
Kering	13,665	6.06%	28.65%	32.25%	17.97%	0.38
LVMH	46,826	6.71%	21.27%	25.45%	17.13%	0.48
Moncler	1,420	6.47%	29.16%	33.14%	31.05%	0.96
Dior	46,826	6.71%	21.06%	29.52%	12.47%	0.05
Prada	3,449	8.98%	10.54%	17.54%	6.05%	0.54
Average luxury industry	14,681	6.45%	25.57%	29.57%	21.76%	0.71

All Tabs Source: team assessment

APPENDIX 8: MOAT ANALYSIS

Conceptualized and named by Warren Buffett, an economic moat is a distinct advantage a company has over its competitors which allows it to protect its market share and profitability and thus creates an effective barrier against competition. This is important also to potential investors seeking to maximize their portfolios by including companies that will maintain their performance edge. This simple concept stands at the basis of our analysis. The model split each possible moat in three categories: no moat, narrow and wide. We assign a mark from 1 to 5 to each possible economic moat, relying on its capability to remain a competitive advantage in the long run and on the advantage level for the company.

Company Sources	Specific	Additional information	Score	Final	MOAT Valuation
INTANGIBLE ASSETS	BRAND	Ferrari brand identity is particularly strong, due to its exclusivity, well-established geographical presence, limited production, waiting lists for wannabe Ferrari owners. When it comes to more exclusive models, even prior ownership and a good rapport with a Ferrari dealership might not grant access, so it gets to set the price, in this way it can pick its desired margins (in FY18 ca. 22%).	5	3.5	Wide
	PATENTS	Patents are a result of companies' filings with governments to protect know-hows for a specific period of time. Thanks to planned investments in R&D and exclusive licenses, Ferrari patents (such as the one for V12) are characterized by high margins and absence of competition. Even if the products come off patent, competitors will hesitate to enter the market because of the difficulty involved in replicating the offering.	4		Wide
	REGULATORY LICENSES	Regulatory processes do not significantly influence competition, except for the ones related to the environmental sustainability. Ferrari is also specializing in this field, new projects are set for 2025.	1		Wide
CUSTOMER SWITCHING COSTS	CUSTOMER SWITCHING COSTS	Customer switching costs are quite high, since Ferrari is the leader in the niche ULC market. Clients are not price sensitive, so they would switch only if one of the other competitors has higher quality products, in terms of innovation, components or in case of a change in their personal preferences.	4	4	Wide
NETWORK EFFECT	NETWORK EFFECT	Network effect is not particularly relevant for RACE business, value of service does not increase with the number of consumers.	1	1	NO - Moat
COST ADVANTAGES	LOCATION	The company shows a developed geographical presence, thanks to its stores, dealers and retailers worldwide, this provides a cost advantage.	2	2	Narrow
SIZE ADVANTAGE	SIZE ADVANTAGE	The ultra-luxury market has a limited size, served by just a few companies, in which Ferrari is a large player. Potential competitors are discouraged from entering because it would result in insufficient returns.	4	4	Wide

APPENDIX 9: FINANCIAL FORECASTS

REVENUES FORECASTS. We perform detailed revenues' forecast estimates by disentangling RACE's business in its four main divisions: i) Cars-Spare Parts, ii) Engines, iii) Sponsorship, Commercial and Brand (including Scuderia Ferrari) and iv) "Other". For each division, we start by identifying the key drivers of the company's organic growth.

I) CARS-SPARE PARTS

This division can be further split in **A) Cars** and **B) Spare Parts**

A) CARS

Revenues breakdown by geographic area.

Cars revenues are driven by two main effects: the estimates of volumes (i.e., the volume effect) and prices (i.e., the price effect). In order to estimate the volume effect, we perform a bottom-up approach by separating the global market in which Ferrari operates in its four geographic areas (EMEA, Americas, Greater China, and Rest of APAC).

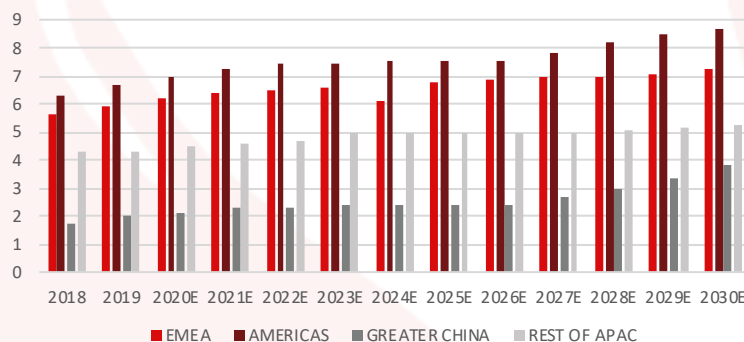
For each area, we believe that a strong predictor of the growth of cars units sold is represented by HNWI (High Net Worth Individuals) population growth. Thus, changes in HNWI population could have a strong impact on Ferrari's volumes, pushing up revenues and earnings' growth for the company. On the contrary, Real GDP cannot be considered a good predictor, since Ferrari exhibits low cyclicality.

Hence, for each region, we forecast the units of cars sold by performing Ordinary Least Squared linear regression. To better capture the elasticity of units cars sold to HNWI population, we regress the natural logarithm of cars sold on the natural logarithm of HNWI population in each geographic area.

UNITS CARS SOLD				
REGION	LINE	T STAT	R ²	CAGR 2020E-2030E
EMEA	$y = +1.306543x - 11.9866$	4.208473	0.735814	1.58%
Americas	$y = +0.679672x - 2.67882$	6.114833	0.858463	2.30%
Greater China	$y = +0.390988x + 0.94652$	2.488501	0.553278	6.10%
Rest of Apac	$y = +1.940767x - 22.5099$	6.430687	0.870561	1.16%

As a result, we come out with a regression characterized by significant parameters and acceptable R². Therefore, OLS regressions results confirm our strategic suggestions: HNWI population dynamics influences RACE's units of cars sold. Our estimates are basing on the following growth of HNWI. From 2020 to 2030 we expect a noteworthy growth in Chinese HNWI population (+6.01% CAGR FY20E-FY30E), while EMEA, Americas and Rest of APAC HNWI population is expected to grow at lower rates (respectively +3.0%, +3.5%, 2.8% CAGR FY20E-FY23E).

According to our model, Ferrari will reach more than 11K cars sold starting from 2025E, in line with the low volume strategy implemented by the company. In FY30E we expect ca. 12K units of cars sold (+2.0% CAGR FY20E-30E).



Source: team assessment

RACE has received the largest share of Formula 1's prize money despite more than 10 years without winning a championship. Specifically, last 3 years' participation to Formula 1 Championship has entitled Ferrari to achieve different prizes, as shown in the table below:

SHIPMENTS BY GEOGRAPHIC AREA (units of cars sold)												
	2019	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
EMEA	4895	4634	4847	4968	5033	5059	5258	5327	5399	5462	5558	5684
Growth YoY %	15.8%	-5.3%	4.6%	2.5%	1.3%	0.5%	3.9%	1.3%	1.4%	1.2%	1.8%	2.3%
AMERICAS	2900	3073	3157	3204	3225	3238	3239	3239	3321	3439	3500	3579
Growth YoY %	3.4%	6.0%	2.7%	1.5%	0.7%	0.4%	0.01%	0.01%	2.5%	3.6%	1.8%	2.3%
GREATER CHINA	836	767	786	796	801	805	805	805	836	873	916	965
Growth YoY %	20.3%	-8.2%	2.5%	1.2%	0.7%	0.4%	0.0%	0.0%	3.9%	4.4%	4.9%	5.4%
APAC	1500	1451	1537	1597	1628	1638	1638	1639	1684	1744	1774	1815
Growth YoY %	12.9%	-3.3%	5.9%	3.9%	1.9%	0.6%	0.0%	0.0%	2.7%	3.6%	1.8%	2.3%
TOTAL	10131	9926	10327	10564	10688	10740	10940	11010	11240	11518	11748	12042
Growth YoY %	9.5%	-2.0%	4.0%	2.3%	1.2%	0.5%	1.9%	0.6%	2.1%	2.5%	2.0%	2.5%

EMEA will still be the leading market, representing on average 47% (in FY20E-30E) of total units of cars sold, whereas Americas and Greater China shipments will fade out (respectively +0.9%, 0.8% CAGR FY20E-26E). Rest of APAC shipments are expected to grow at +2.0% CAGR, representing steadily the 15.08% of total shipments (FY13-30E). Such geographical allocation is the result of managing the product phase-in, phase-out across geographies, in relation to the waiting list.

All Tabs Source: team assessment

Regarding the **price effect**, we start by estimating the average price (ASP) for each geographic region from FY13 to FY19 by using as a proxy the ratio of Cars-Spare Parts' division revenues over the number of cars sold. This will help us understanding the average price growth.

HISTORICAL AVERAGE PRICE							
Data in thousands	2013	2014	2015	2016	2017	2018	2019
EMEA	€ 200.00	€ 204.00	€ 208.08	€ 212.24	€ 216.49	€ 220.82	€ 225.23
Americas	€ 250.00	€ 255.00	€ 260.10	€ 265.30	€ 270.61	€ 276.02	€ 281.54
Greater China	€ 332.00	€ 338.64	€ 345.41	€ 352.32	€ 359.37	€ 366.55	€ 373.89
Rest of Apac	€ 203.00	€ 207.00	€ 211.08	€ 215.24	€ 219.49	€ 223.82	€ 228.23

The table shows:

1. Greater China ASP is on average 66% higher than EMEA ASP
2. Rest of Apac ASP is similar to EMEA ASP
3. On average ASP has increased by 2% per year, showing very low volatility.

Based on this empirical evidence, we expect that on-average-ASP forecast will grow linearly at a 5.1% YoY, in line with the high price strategy introduced by the company in the latest conference call (4 Feb 2020). As a result, the price effect is expected to be more evident in the future.

FORECAST AVERAGE PRICE											
Data in thousands	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
EMEA	€ 242.79	€ 291.35	€ 307.37	€ 324.28	€ 340.49	€ 355.81	€ 375.38	€ 382.89	€ 390.55	€ 398.36	€ 406.33
Americas	€ 293.79	€ 352.55	€ 371.94	€ 392.39	€ 412.01	€ 430.55	€ 454.23	€ 463.32	€ 472.59	€ 482.04	€ 491.68
Greater China	€ 403.03	€ 483.64	€ 510.24	€ 538.30	€ 565.21	€ 590.65	€ 623.13	€ 635.60	€ 648.31	€ 661.27	€ 674.50
Rest of Apac	€ 245.79	€ 294.35	€ 310.37	€ 327.28	€ 343.49	€ 358.81	€ 378.38	€ 385.89	€ 393.55	€ 401.36	€ 409.33

Finally, revenues forecasts are obtained by multiplying the forecasted quantity times the estimated ASP.

CARS REVENUES											
Million Euros	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
EMEA	1113	1412	1527	1632	1723	1871	2000	2067	2133	2214	2309
Growth YoY %		26.9%	8.1%	6.9%	5.5%	8.6%	6.9%	3.4%	3.2%	3.8%	4.3%
AMERICAS	888	1113	1192	1266	1334	1395	1471	1539	1625	1687	1760
Growth YoY %		25.3%	7.1%	6.2%	5.4%	4.5%	5.5%	4.6%	5.6%	3.8%	4.3%
GREATER CHINA	269	380	406	431	455	475	501	532	566	606	651
Growth YoY %		41.4%	6.8%	6.2%	5.4%	4.5%	5.5%	6.0%	6.5%	7.0%	7.5%
Rest of Apac	340	448	491	528	558	583	615	645	681	707	737
Growth YoY %		31.6%	9.6%	7.6%	5.6%	4.5%	5.5%	4.8%	5.6%	3.8%	4.3%

Starting from FY21E both volumes and prices are forecasted to increase in all geographic regions, reaching the peak in FY30E with €5498mIn total cars revenues.

B) SPARE PARTS

The replacement business is an efficient sector and represents an important part of RACE portfolio.

It is natural to assume that Spare Parts division revenues strongly depends (or are influenced) by the value of Ferrari cars sold over the years. Unfortunately, it is very difficult to estimate the latter variable. Therefore, in order to assess Spare Parts' revenues, we use as a proxy the number of cars sold in the previous year, due to its predictable power.

DIVISION	PREDICTED VARIABLE	REGRESSOR	LINE	R ²	T STAT	CAGR 2020E-2030E
Spare Parts	ln(spare parts sales)	ln(cars sold in t-1)	y= +1.009491x-3.68994	0.356756	1.92	5.42%

We Ordinary Least Square regress the natural logarithm of Spare Parts revenues on the natural logarithm of units of cars sold in the previous year, obtaining statistically significant results at 95% level of confidence According to our estimates, this division is expected to face a substantial growth in FY21E (+7.5% CAGR), which will become slower starting from FY23E (+2.0% CAGR). On a 10Y average (FY20E-FY30E), this business segment will remain stable at 5% of total revenues.

II) ENGINES

Ferrari engines' sales strongly depend on Maserati financial performance, since the latter is the main buyer of its engines for the V6, V8, and V12 spectrum model. Therefore, we perform an OLS regression model to forecast engines' revenues (by regressing its natural logarithm on the natural logarithm of previous year Maserati revenues).

DIVISION	PREDICTED VARIABLE	REGRESSOR	LINE	R ²	T STAT	CAGR 2020E-2030E
Engines	ln(engines sales)	ln(Maserati revenues in t-1)	y= +0.712053914x	0.956532	13.4598	1.08%

Also in this case, we obtain significant coefficient and acceptable R2.

Our estimation shows that engines revenues will continue to face a downward trend until FY24E with a +1.4% CAGR. In FY25E we expect a slow engines revenues resumption showing a +3.8% CAGR until FY30E.

III) COMMERCIAL SPONSOR AND BRAND.

This division can be further split in: **A) Scuderia Ferrari** and **B) Commercial and Brand**

A) SCUDERIA FERRARI

Despite the lack of full disclosure of data about F1 revenues, we believe it is important to separate Scuderia Ferrari revenues (Sponsorship) from those stemming from Commercial and Brand, due to the crucial role played in Ferrari's business strategy. As shows in Appendix X, Scuderia Ferrari revenues stem from two main sources: prize money and sponsorship. In order to forecast future revenues, we estimate that sponsorship income will be an increasing stepwise function with positive jumps at regular intervals due to sponsorships contracts renewals and to the arrival of new sponsors. On the contrary, prize money is estimated to decrease, according to the new Concorde Agreement. In fact, starting from FY21E, Ferrari is not expected to receive any more the Long Standing Team prize money.

Million euros	2019	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E
Sponsor	230	230	230	230	250	250	250	250	250	250	250
<i>Sponsor / TOT</i>	55%	55%	57%	58%	65%	67%	68%	69%	68%	78%	75%
LINE 1	32	34	53	49	40	38	36	33	43	36	49
LINE 2	50	49	70	65	53	50	48	44	44	25	25
CCB	37	37	53	49	40	38	36	33	33	10	10
LST	66	69	0	0	0	0	0	0	0	0	0
Prize Tot	185	189	175	163	133	126	120	111	120	71	84
<i>Prize / TOT</i>	45%	45%	43%	42%	35%	33%	32%	31%	32%	22%	25%
TOT (Sponsor + Prize)	415	419	405	393	383	376	371	361	370	321	334
<i>YoY Growth %</i>		1%	-3%	-3%	-2%	-2%	-1%	-3%	2%	-13%	4%

B) COMMERCIAL AND BRAND (C-B)

C-B represents a key strategy designed to further strengthen Ferrari's brand. We expect a moderate growth in C-B revenues in the short run (up to FY21E with a +7% CAGR) as the company is restructuring its brand diversification strategy. On the contrary, we estimate an impressive growth in the long run (+13% CAGR FY22E-FY30E), reflecting the numerous initiatives taken to sustain the vibrancy and vitality of Ferrari Brand.

IV) OTHER

"Other" revenues mainly consist of interests' income generated by financial services and net revenues from the management of the Mugello racetrack. We estimate that the former contributes to 80% of this division revenues whereas, the latter to the remaining 20%. The choice of these percentages was driven by the intrinsic relationship between Financial services' revenues and the numbers of cars sold by Ferrari, with the latter representing the most relevant driver for total revenues. Based on these weights, we forecast a steady revenues growth (on average +9% CAGR FY20E-FY26E).

Million euros	2019	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E
Commercial & Brand	123	135	152	212	291	387	425	447	493	514	534
<i>YoY Growth %</i>	-14%	10%	12%	40%	37%	33%	10%	5%	5%	5%	5%
"Other "	104	114	124	137	149	163	179	195	185	193	200
<i>Yoy Growth %</i>	10%	9%	9%	10%	9%	9%	10%	9%	9%	9%	9%
Financial Services	83	91	99	109	119	130	143	156	148	154	160
Mugello	21	23	25	27	30	33	36	39	39	39	39

R&D COSTS ESTIMATES. Ferrari's R&D spending is split between its F1 racing activities and its road car/engines business. Unfortunately, the company does not disclose this split, but states that F1 R&D spending accounts for more than 60% of the total R&D.

To estimate R&D spending, we perform a OLS (ordinary least squares) regression of logarithm of R&D using the logarithm of Revenues as main driver, to capture the elasticity of R&D investments to revenues. Our estimates show that, for each 1% increase in revenues, R&D costs grow less than proportionally, that is by 0.79%. Based on our revenues' estimates, our forecasted R&D costs exhibits a lower growth (+4.4% FY20E-30E) compared to the past (+7.1% CAGR FY12-19).

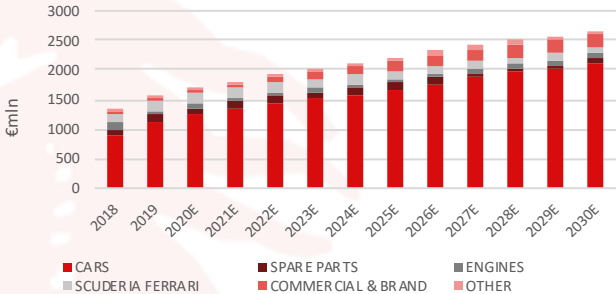
	PREDICTED VARIABLE	REGRESSOR	LINE	R ²	T STAT	CAGR 2020E-2030E
R&D	ln(R&D)	ln(Total Revenues)	y = 0.796776x	0.856586	1.97987	4.41%

In our analysis, COGS' growth is expected to be lower than revenues growth (respectively, +5.3% vs 6.7% CAGRs in FY22E).

All Tabs Source: team assessment

COGS ESTIMATES. In our forecast analysis, COGS are determined by estimating a linear regression model in which total revenues are used as regressor. In particular, we found that the COGS's estimated regression exhibit a coefficient of €394mIn and a sensitivity to total revenues of 31.71%. According to our estimates, COGS's growth is expected to be lower than revenues growth (respectively +5.3% vs 6.7% CAGRs in FY22E). As a result, Ferrari's margins are forecasted to be higher, reflecting the company's ability to optimize costs.

Graph and Tabs source: team assessment



PREDICTED VARIABLE		REGRESSOR	LINE	R ²	T STAT	CAGR 2020E-2030E
COGS	COGS	Total Revenues	y = 0.317652x + 394.13	0.781658	1.96408	4.51%

APPENDIX 10: BALANCE SHEET

Million Euros	2013	2014	2015	2016	2017	2018	2019	2020E	2021E	2022E	2023E	2024E	2025E	2026E
Tangible Assets	568	585	626	669	710	851	936	1005	1080	1095	1168	1243	1325	1406
Other Non Current Assets	25	64	967	676	641	681	500	500	500	500	500	500	500	500
Financial Assets	38	47	12	34	30	32	31	31	31	31	32	32	32	32
Intangibles	1029	1052	1095	1140	1225	1431	1505	1579	1653	1728	1802	1876	1949	2021
of which Goodwill	787	787	787	785	785	785	785	785	785	785	785	785	785	785
Net Working Capital	1122	1361	-620	154	454	718	795	876	959	1035	1110	1183	1256	1328
% on Sales	48%	49%	-22%	5%	13%	21%	21%	21%	21%	22%	22%	22%	22%	22%
Receivables	206	184	158	244	239	211	233	206	269	289	308	327	346	364
Inventories	238	296	295	324	394	391	350	484	484	484	484	484	484	484
Payables	486	536	508	615	608	654	667	754	799	845	890	934	977	1019
Op Working Capital	-43	-56	-54	-47	26	-51	-84	-64	-46	-72	-98	-123	-148	-172
% on Sales	-2%	-2%	-2%	-2%	1%	-1%	-2%	-2%	-1%	-1%	-2%	-2%	-3%	-3%
Capital Employed	2782	3110	2080	2672	3061	3713	3767	3992	4224	4388	4611	4834	5062	5287
Invested Capital	2310	2489	1316	1773	2279	2923	2884	3292	3850	3735	3632	3539	3455	2702
Other LT Liabilities	1022	1207	166	963	1130	1232	1104	1459	1098	1395	1650	1885	2128	2371
Net Debt	-556	-576	1933	1380	1147	1127	1192	514	422	289	257	245	230	212
Net Equity	2290	2470	-25	325	779	1349	1467	2016	2702	2702	2702	2702	2702	2702
Total Equity	2316	2478	-19	330	784	1354	1471	2019	2704	2704	2704	2704	2704	2704
Capital Employed	2782	3110	2080	2672	3061	3713	3767	3992	4224	4388	4611	4834	5062	5287

APPENDIX 11: INCOME STATEMENT

Million euros	2013	2014	2015	2016	2017	2018	2019	2020E	2021E	2022E	2023E	2024E	2025E	2026E
Revenues	2335	2762	2854	3105	3417	3420	3766	4115	4483	4812	5138	5454	5762	6063
Growth YoY%	5%	18%	3%	9%	10%	0%	10%	9%	9%	7%	7%	6%	6%	5%
Cost of Goods Sold (COGS)	1085	1342	1339	1436	1491	1334	1588	1699	1816	1920	2024	2124	2222	2317
% on Revenues	46%	49%	47%	46%	44%	39%	42%	41%	41%	40%	39%	39%	39%	38%
Gross Profit	1250	1420	1515	1669	1926	2086	2178	2416	2667	2892	3114	3330	3541	3746
% on Revenues	54%	51%	53%	54%	56%	61%	58%	59%	59%	60%	61%	61%	61%	62%
R&D	479	541	562	614	657	643	699	751	804	850	896	939	981	1022
% on Revenues	21%	20%	20%	20%	19%	19%	19%	18%	18%	18%	17%	17%	17%	17%
SG&A	260	300	304	295	329	327	210	235	260	284	308	333	357	382
% on Revenues	11%	11%	11%	10%	10%	10%	6%	6%	6%	6%	6%	6%	6%	6%
Other	15	18	18	21	6	0	0	1	1	1	1	1	1	1
% on Revenues	0.7%	0.6%	0.6%	0.7%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
EBITDA	496	561	632	739	934	1116	1269	1430	1602	1757	1909	2057	2201	2341
% on Revenues	21%	20%	22%	24%	27%	33%	34%	35%	36%	37%	37%	38%	38%	39%
D&A	150	163	160	144	160	289	352	387	403	409	385	382	375	364
% on Revenues	6%	6%	6%	5%	5%	8%	9%	9%	9%	9%	8%	7%	7%	6%
EBIT	346	398	472	595	774	827	917	1043	1199	1348	1524	1675	1826	1977
% on Revenues	15%	14%	17%	19%	23%	24%	24%	25%	27%	28%	30%	31%	32%	33%
Net Interests	20	0	-38	-28	-28	-24	-42	-61	-60	-97	-173	-213	-253	-292
Pre Tax Income	366	398	434	567	746	803	875	982	1139	1251	1351	1462	1573	1686
% on Revenues	16%	14%	15%	18%	22%	23%	23%	24%	25%	26%	26%	27%	27%	28%
Income Taxes	120	133	144	168	209	16	176	231	287	315	340	368	396	424
% Tax rate	33%	33%	33%	30%	28%	2%	20%	24%	25%	25%	25%	25%	25%	25%
Minority Interes	5	4	2	1	2	2	0	3	6	-3	-3	-3	-3	-3
Net Income	241	261	288	399	535	785	699	754	858	933	1008	1091	1174	1258.131

APPENDIX 12: CASH FLOWS

Millions euros	2014	2015	2016	2017	2018	2019	2020E	2021E	2022E	2023E	2024E	2025E	2026E
EBIT	1420	1515	1669	1926	2086	2178	2416	2667	2892	3114	3330	3541	3746
Taxes on Ebit %	33%	33%	30%	28%	2%	20%	24%	25%	25%	25%	25%	25%	25%
D&A	163	160	144	160	289	352	387	403	409	385	382	375	364
Change in Working Capital	-14	2	7	73	-77	-33	20	19	-26	-26	-25	-25	-24
Cash Flow from Operations	1095	1175	1327	1620	2256	2058	2254	2417	2547	2690	2848	2999	3143
Capex	-333	-356	-342	-391	-638	-706	-700	-688	-683	-730	-774	-818	-861
FCFO	109	117	214	254	538	412	464	594	760	822	886	947	1006
Growth YoY %		8%	83%	18%	112%	-23%	13%	28%	28%	8%	7%	6%	
Interests	0	-38	-28	-28	-24	-42	-61	-60	-97	-173	-213	-253	-292
Taxes on interests	0	-25	-20	-20	-24	-34	-46	-45	-72	-129	-160	-189	-218
Issuance/reduction of debt	0	35	2785	-365	-88	80	114	-615	-42	-87	9	-62	18
FCFE	109	127	2834	-159	404	356	373	-221	540	549	644	530	525
Dividends	0	0	-87	-120	-133	-195	-204	-221	-248	-224	-224	-224	-224

APPENDIX 13: KEY FINANCIAL RATIO

	2014	2015	2016	2017	2018	2019	2020E	2021E	2022E	2023E	2024E	2025E	2026E
ROIC	11%	22%	22%	23%	27%	24%	23%	22%	25%	28%	31%	34%	47%
ROCE (ex. GOODWILL)	17%	37%	32%	34%	28%	31%	33%	35%	37%	40%	41%	43%	44%
Capital Turnover	0.9	1.4	1.2	1.1	0.9	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.1
ROE	11%	24%	266%	97%	74%	50%	43%	36%	35%	37%	40%	43%	47%
ROA	9%	11%	15%	19%	18%	18%	19%	21%	23%	25%	26%	27%	28%
Operating Working Capital	-56	-54	-47	26	-51	-84	-64	-46	-72	-98	-123	-148	-172
Asset Turnover (Rev/Assets)	0.6	0.7	0.8	0.8	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.8
Capex/D&A(x)	2.0	2.2	2.4	2.4	2.2	2.0	1.8	1.6	1.4	1.9	2.0	2.2	2.4
Net Debt/Equity	-0.2	-99.6	4.2	1.5	0.8	0.8	0.3	0.2	0.1	0.1	0.1	0.1	0.1
Net Debt/EBITDA(x)	-1.03	3.06	1.87	1.23	1.01	0.94	0.36	0.26	0.16	0.13	0.12	0.10	0.09
Interest Coverage Ratio(x)	NaN	28	20	22	32	22	34	71	79	90	99	107	116
Payout Ratio	-0.2%	13.1%	7.0%	5.2%	3.1%	6.0%	8.1%	7.0%	10.4%	17.1%	19.6%	21.6%	23.2%
Goodwill/CE	25%	38%	29%	26%	21%	21%	20%	19%	18%	17%	16%	16%	15%

All Tabs Source: team assessment

APPENDIX 14: M-SCORE

INPUT VARIABLES (€M)	2015	2016	2017	2018	2019
Current Assets	1,176	1,331	1,534	1,857	2,680
Total Assets	3,875	3,850	4,141	4,852	5,340
Current Liabilities	1,867	1,177	1,080	1,139	798
Long-Term Debt	1,341	1,448	1,500	1,575	2,090
PPE	626	669	710	851	996
Cash	327	468	659	800	898
Revenues	2,854	3,105	3,417	3,420	3,766
Depreciation/amortization	160	144	160	289	352
General & Administrative Expenses	339	295	329	327	210
Gross Margin	47.49%	49.13%	51.69%	52.55%	48.47%
Cost of good sold	1,499	1,580	1,651	1,623	1,940

INPUTS USED TO CALCULATE M-SCORE	2016	2017	2018	2019
DAY'S SALES RECEIVABLES INDEX --> DSRI	0.6097	0.8696	1.1309	0.9724
GROSS MARGIN INDEX --> GMI	1.0108	1.0173	1.0059	0.9731
ASSET QUALITY INDEX --> AQI	0.8863	0.9558	0.9659	0.7000
SALES GROWTH INDEX --> SGI	1.0878	1.1004	1.0010	1.1011
DEPRECIATION INDEX --> DEPI	1.2548	0.9392	0.5662	0.9405
SGA EXPENSES INDEX --> SGAI	0.8015	1.0129	0.9938	0.5815
LEVERAGE INDEX --> LVGI	0.8238	0.9135	0.8977	0.9669
TOTAL ACCRUALS/TOTAL ASSETS --> TATA	-0.1573	-0.0303	-0.0304	-0.0969

M-SCORE (5-VARIABLE MODEL)	-3.21	-2.97	-2.87	-3.08
M-SCORE (8-VARIABLE MODEL)	-3.42	-2.64	-2.53	-2.93

We use the Beneish's M-SCORE analysis, created in 1999 by Dr Messod Beneish, to better understand whether RACE earnings have not been manipulated. The scoring process starts with the computation of different ratios made by salvaging data from the financial statement of the firm. An M-score lower than -2.22 means that the firm is not likely to be a manipulator of earnings. We can use two different formulas in order to get the scoring.

The formula for the 8 variable model is:

$-4.84 + (0.92*DSRI) + (0.528*GMI) + (0.404*AQI) + (0.892*SGI) + (0.115*DEPI) - (0.172*SGAI) - (0.327*LVGI) + (4.679*TATA).$

The formula for the 5 variable model is:

$-6.065 + (0.823*DSRI) + (0.906*GMI) + (0.593*AQI) + (0.717*SGI) + (0.107*DEPI).$

RESULT: Likelihood of race manipulating its earning results is low, based on the M-SCORE model.

Source: team assessment

APPENDIX 15: COMPARABLES SELECTION

In order to value Ferrari with the multiple approach it is very important to correctly identify the set of listed comparables. As explained in the competitive financial analysis, however, RACE's low-production strategy, strong brand awareness and business margins closely tie the company to the pure-luxury industry. For these reasons, in the peers' selection we look at two different groups of potential comparable companies: (a) companies belonging to the Automaker industry and (b) companies belonging to the pure-luxury industry.

In more details, we perform the following 3 steps selection method to identify Ferrari's comparables:

STEP 1

In the first step, within the Consumer Discretionary's sector, we select all companies belonging to the Automaker industry (Group A) and to the sub-industry Apparel, Accessories & Luxury Goods (Group B) according to GICS Standards. Regarding Group A (Automobiles industry), we exclude companies with a Market Cap lower than 25B in line with RACE's size. We decide to include also Harley-Davidson and Aston Martin in Group A (despite their size), because they possess SOME characteristics similar to RACE. Next, we exclude Ford, Honda and Toyota because their potential clients are completely different from RACE's ones. On the other side, regarding Group B (Luxury sub-industry), we rule out companies with a Market Cap lower than 2B and those whose products do not (entirely) belong to the pure-luxury sector (EssilorLuxottica, Swatch, Pandora and Canada Goose). Moreover, we also exclude luxury-personal care companies (L'Oréal, Estée Lauder, Shiseido and L'Occitane) because they are characterized by a higher price elasticity of demand.

STEP 2

Since RACE's business is characterized by very high margins (e.g., 52.6% Gross Margin and 32.6% EBITDA margin in 2018), we rule out companies with a Gross Margin lower than 40%. As a result, all companies belonging to the Automobile Industry (Group B) are excluded from our selection process. The following tables report the results of our selection process after Steps 1 and 2.

Consumer Discretionary - Apparel, Accessories & Luxury Goods				
Company	Market Cap (€bn)	Pure Luxury	Gross Margin	Selection
LVMH	208.3	X	66.2%	
L'Oréal	151.1		73.0%	NO
Dior	81.1	X	66.2%	
Hermès	72.5	X	66.9%	
Kering	71.0	X	59.4%	
Estée Lauder	68.4		77.2%	NO
EssilorLuxottica	59.8		63.6%	NO
Richemont	38.6	X	67.9%	
Shiseido	23.6		77.5%	NO
Swatch	11.0		43.3%	NO
Moncler	9.8	X	74.2%	
Burberry	9.6	X	64.2%	
Prada	8.8	X	65.3%	
Ralph Lauren	8.1	X	57.0%	
Pandora	4.4		72.9%	NO
Canada Goose	3.2		60.3%	NO
Hugo Boss	2.9	X	61.0%	
L'Occitane	2.8		79.5%	NO
Salvatore Ferragamo	2.8	X	59.3%	
Brunello Cucinelli	2.2	X	43.8%	

Consumer Discretionary - Automobiles			
Company	Market Cap (€bn)	Gross Margin	Selection
Toyota	185.1	18.0%	NO
Volkswagen	84.4	20.2%	NO
Daimler	45.9	19.6%	NO
General Motors	43.7	10.5%	NO
BMW	41.8	24.5%	NO
Honda	41.4	19.9%	NO
Ford	29.3	17.2%	NO
Harley-Davidson	4.8	30.0%	NO
Aston Martin	1.2	30.6%	NO

All Tabs Source: team assessment

STEP 3

In order to catch RACE's unique characteristics, we evaluate all remaining companies along five dimensions - business margins (using EBIT and EBITDA margins), brand awareness, pricing power (elasticity to price), low-volume production strategy and size - and assign a score depending on its 'distance' to RACE. Exhibit 30 reported at page 9 of the valuation section highlights the result of our selection process after Step 3.

APPENDIX 16: WACC COMPUTATION

We determine RACE WACC as a weighted average of its cost of debt R_d (computed using an augmented Merton-Black & Scholes model) and its levered cost of equity R_e (computed using the CAPM formula and levered beta).

Risk-free rate estimate. In the CAPM formula, we estimate the Risk-Free Rate with a bottom-up approach based on the country-weighted average of the 10Y government bond yields, using as weights the fraction of sales revenues that Ferrari generates in that geographical area. In the regions where country-level revenues are not disclosed, we compute the country weight as the ratio of that country's number of dealerships divided by the regional number of dealerships. Finally, for the countries in the Euro area we use the value of the 10Y government bond of Germany as a proxy for the risk-free rate.

Equity Risk Premium estimate. We also estimate the Equity Risk Premium using a bottom-up approach based on the country-weighted average of market risk premia (equity risk premium + country risk premium), using as weights the fraction of sales revenues that Ferrari generates in that geographical area. Similar to the case of the risk-free rate, in the regions where country-level revenues are not disclosed, we compute the country weight as the ratio of that country's number of dealerships divided by the regional number of dealerships.

Beta. We compute the company's levered Beta by regressing the log returns of RACE's stock on the MSCI-World Index log returns. We use the MSCI World index as proxy for the market portfolio because of RACE worldwide business exposure. Our time series span the last two years period, at a weekly frequency to avoid any noise arising from daily observations. Our results show that RACE has a Beta Levered close to 1.

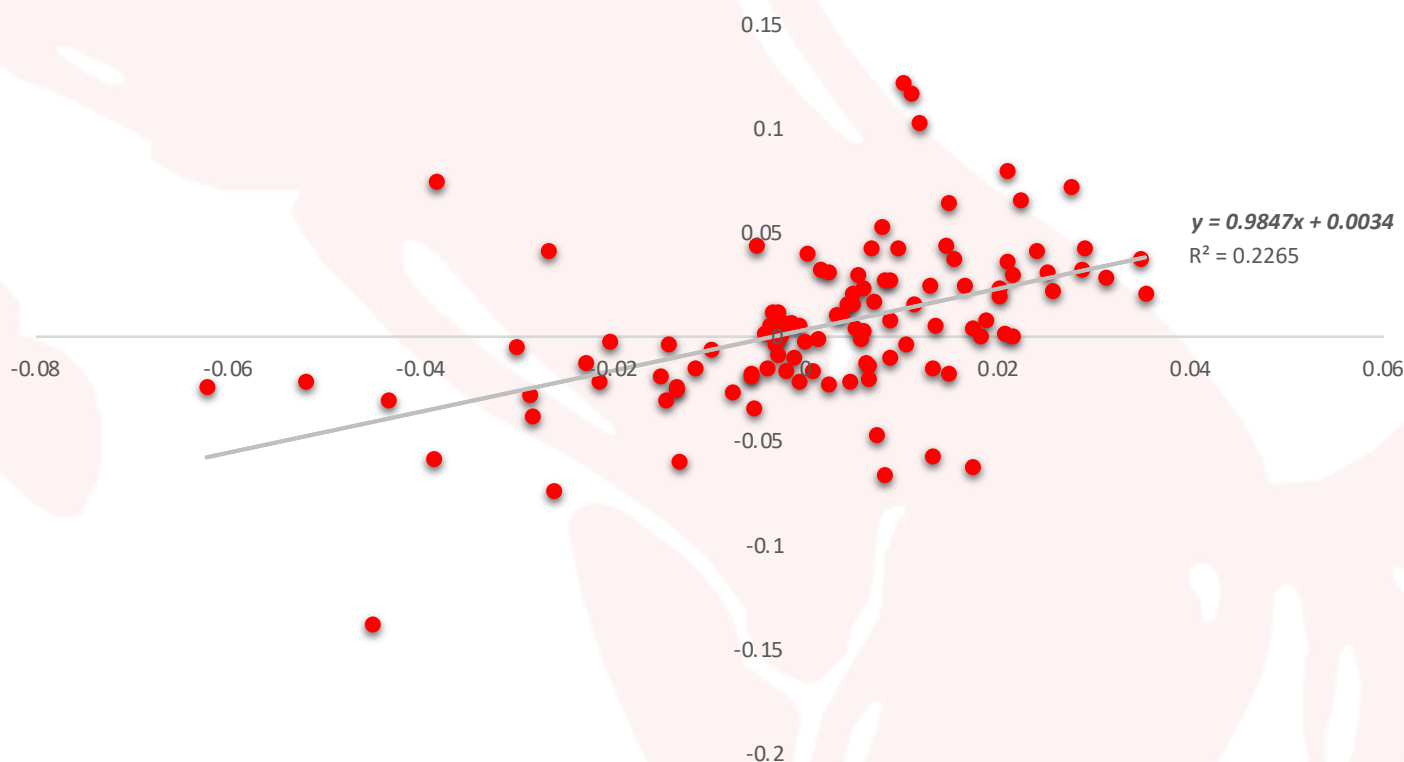
Weekly Beta Regression (MSCI World; 2years).

	Weighted 10y gov. bond yield	Weight
EMEA	0.030%	48.00%
America	1.539%	29.00%
Greater China	2.849%	8.00%
Rest of APAC	1.331%	15.00%
Risk Free Rate	0.888%	

	Weighted Market Risk Premium	Weight
EMEA	6.780%	48.00%
America	5.30%	29.00%
Greater China	6.58%	8.00%
Rest of APAC	7.12%	15.00%
Equity Risk Premium	6.3858%	

Index	Beta	Correlation	R ²
MSCI World	0.9847	0.476	0.226

Graph and Tabs Source: team assessment



Cost of Debt (R_d) estimate. We estimate RACE's cost of debt (R_d) as the sum of two terms: 1) a risk-free component plus 2) a credit spread premium. Since RACE's leverage is denominated in euro, we use the yield on the 10Y-German Bund as a proxy of the risk-free term (-0.4%). For what concerns the spread premium, we estimate RACE's spread by using an augmented Merton-Black & Scholes model. Such model consists of multi-variate regressions applied to the most liquid automotive issues (single bonds). It explains the fair-value 10-year spread of each issuer by using a set of fundamental variables (such as Debt/EBITDA; EBITA/Interest Expenses; RCF/Net Debt) and market regressors (such as single stock volatility, risk-free rate, and duration). According to our methodology, RACE's spread would be 140 bps, implying a cost of debt of 1%. Moreover, according to Moody's rating agency, such spread would be consistent with a Baa1 rating. Therefore, to further validate our augmented Merton-Black & Scholes model, we fully replicate Moody's rating methodology for automakers issuers (see table below) obtaining precisely a Baa1 rating.

Moody's rating Methodology for Automotive Manufacturers industry

Factor	Factor Weighting	Sub-factor	Ferrari Sub-factor	Ferrari Sub-factor score	Ferrari Sub-factor numerical score	Sub-factor Weighting	Weighted numerical score
Business Profile	40%	Trend in Global Unit Share Over Three Years	-4.5%	Ca	20	10%	2
		Market Position and Product Breadth/Strength	Strong competitive position in at least two of the four key global geographic regions; highly competitive and profitable product portfolio in its entirety with modest variations in rate of model renewal, though there may be some gaps/areas of weakness. Emissions-reducing technologies and AFV product development are strong with an above-average market position in terms of innovation and customer acceptance; well-articulated strategy and consistent investments sufficient to meet future regulatory standards, including emissions and fuel economy.	Ba	9	30%	2.7
Profitability and Efficiency	20%	EBITA Margin	34.12%	Aaa	1	20%	0.2
Leverage and Coverage	30%	Debt/EBITA	89.28%	Aa	3	10%	0.3
		(Cash + Marketable Securities)/Debt	121.82%	Aa	3	5%	0.15
		RCF/Debt	4.35%	Caa	18	5%	0.9
		FCF/Debt	3.38%	B	15	5%	0.75
		EBITA/Interest Expense	89.98	Aaa	1	5%	0.05
Financial Policy	10%	Financial Policy	Expected to have predictable financial policies (including risk and liquidity management) that preserve creditor interests; although modest event risk exists, the effect on leverage is likely to be small and temporary; strong commitment to a solid credit profile.	A	6	10%	0.6
100%		Total				100%	7.65
							FINAL RATING Baa1

Source: Moody's research, team assessment

RACE's optimal financial structure. We also determine the optimal financial structure of RACE to better understand whether the company can exploit some value creation for its shareholders due to the tax benefits associated to its leverage. More precisely, for different values of the leverage ratio $D/(D+E)$ we compute the corresponding cost of equity capital R_e and the cost of debt, in order to determine RACE's WACC. To compute R_e as a function of $D/(D+E)$, we first un-lever the Regression Beta shown above (0.9847) using the 2019 D/E ratio and then re-lever it as a function of $D/(D+E)$. Finally, plugging such re-levered beta in the CAPM formula gives us R_e . On the other side, we estimate the cost of debt spread using the augmented Merton-Black & Scholes model discussed above. Our analysis shows that RACE would benefit from an increase in its leverage ratio.

D/(D+E)	Ro	Market Premium	Risk Free Rate	Re	10y Gov. Bund Yield	Spread (bps)	Rd	Tax Rate	Rd net	Wacc
0%	7.03%	6.3858%	0.888%	7.03%	-0.405%	140	1.00%	25.2%	0.75%	7.03%
1.5%	7.03%	6.3858%	0.888%	7.10%	-0.405%	140	1.00%	25.2%	0.75%	7.00%
3%	7.03%	6.3858%	0.888%	7.17%	-0.405%	140	1.00%	25.2%	0.75%	6.97%
5%	7.03%	6.3858%	0.888%	7.27%	-0.405%	140	1.00%	25.2%	0.75%	6.94%
7.5%	7.03%	6.3858%	0.888%	7.40%	-0.405%	140	1.00%	25.2%	0.75%	6.90%
10%	7.03%	6.3858%	0.888%	7.54%	-0.405%	150	1.10%	25.2%	0.82%	6.87%
12.5%	7.03%	6.3858%	0.888%	7.69%	-0.405%	165	1.25%	25.2%	0.94%	6.85%
15%	7.03%	6.3858%	0.888%	7.84%	-0.405%	182.5	1.43%	25.2%	1.07%	6.83%
20%	7.03%	6.3858%	0.888%	8.19%	-0.405%	205	1.65%	25.2%	1.23%	6.80%
25%	7.03%	6.3858%	0.888%	8.56%	-0.405%	230	1.95%	25.2%	1.46%	6.79%
30%	7.03%	6.3858%	0.888%	9.02%	-0.405%	262	2.27%	25.2%	1.70%	6.80%
40%	7.03%	6.3858%	0.888%	10.10%	-0.405%	298	2.63%	25.2%	1.97%	6.85%
50%	7.03%	6.3858%	0.888%	11.64%	-0.405%	339	3.04%	25.2%	2.27%	6.96%
60%	7.03%	6.3858%	0.888%	13.99%	-0.405%	386	3.51%	25.2%	2.63%	7.15%
70%	7.03%	6.3858%	0.888%	17.87%	-0.405%	441	4.06%	25.2%	3.04%	7.46%

Source: team assessment

APPENDIX 17: MULTIPLES VALUATION

We also perform a relative analysis to support our RACE valuation.

The major problem in using the multiple approach to value RACE is related to the number of proper comparables. RACE, in fact, features unique characteristics in the terms of business margins, brand awareness, pricing power, low-volumes production and size. As shown in Exhibit 27 reported at page 9 of the valuation section, only Hermès, followed by Brunello Cucinelli, share similar features to Ferrari and thus can be considered proper comparables (Group 1). On the contrary, LVMH, Moncler, and Kering (Group 2) seem to possess only SOME characteristics in line with RACE, but they differ along other dimensions. For these reasons, they cannot be considered proper RACE comparables (but only up to some extent). Finally, we exclude Prada, Dior, Richemont, Burberry, Salvatore Ferragamo, Hugo Boss, and Ralph Lauren (Group 3) because their characteristics are quite far from those of RACE. Given the limited number of comparable companies in Group 1, we decide not to estimate a given multiple by regressing it against an independent variable. This is because, with just two companies, the corresponding estimates would be completely unreliable. Similarly, performing the same regressions including all companies belonging to Groups 1 and 2 would also reflect the inappropriateness of the sample considered (due to the inclusion of Group 2), since observations would not follow any clear law. In fact, Table X below highlights precisely this point: the coefficients of the regressor (different 2021E financial indicators) are non-significant in explaining 1-Year-Forward multiple, showing that no financial variable helps explaining the multiple.

	Multiple	Regressor	Equation	t-stat		R ²	Implied Multiple	Target Price
Groups 1 & 2	1YF P/E	EBIT margin 2021E	$y = -26.62x + 34.85$	t-slope: -0.40	t-intercept: 1.94	0.05	27.7x	134.12
	1YF EV/EBITDA	EBITDA margin 2021E	$y = 14.72x + 10.49$	t-slope: 0.43	t-intercept: 0.91	0.06	16.2x	143.80
	1YF EV/EBIT	EBIT margin 2021E	$y = -35.03x + 29.51$	t-slope: -0.87	t-intercept: 2.70	0.20	20.1x	133.50
	1YF P/Book	EBITDA margin 2021E	$y = 7.61x + 3.22$	t-slope: 0.62	t-intercept: 0.79	0.11	6.1x	93.89
	1YF P/Book	ROE 2021E	$y = -9.38x + 7.83$	t-slope: -0.46	t-intercept: 1.67	0.21	4.4x	67.19

Source: team assessment

Therefore, we decide to value RACE using the following weighted-average multiple approach. More precisely, in line with the Comparables Selection's analysis (Appendix), we first create a basket of comparables companies by assigning a larger weight to Hermes (38.3%) and Brunello Cucinelli (28.3%) and lower weights to LVMH (11.1%), Kering (11.1%) and Moncler (11.1%). Next, rather than relying on a single multiple (which could give rise to a larger estimation error stemming from possible model misspecification and outliers), we decide to diversify the estimation error and use more multiples in our analysis. Hence, we focus on 1YF EV/EBITDA, 1YF EV/EBIT and 1YF P/E since these are the most reliable multiples. Then, for each multiple, we compute the basket's weighted-average and determined the corresponding target price. **Last, we equally average these three target prices (Exhibit 27 shown in the valuation section) and obtain a final target price of €155.85.**

APPENDIX 18: Z-SCORE

The Altman Z-Score Analysis indicates the financial health of a company and, therefore, the probability of default for bankruptcy. If the Z-score is below 1.81, a firm has a high probability of bankruptcy, while a score of 2.99 indicates a financially sound firm that is far from filing for bankruptcy.

The formula is:

$$(1.2*Z1) + (1.4*Z2) + (3.3*Z3) + (0.6*Z4) + (1.0*Z5).$$

INPUT VARIABLES (€M)	2016	2017	2018	2019
Tot. Assets	3,849.6	4,141.1	4,851.7	5,198
Tot. Liabilities	3,519.8	3,357.2	3,497.9	3,561
EBIT	595.4	774.3	827	1,042.8
Net Revenues	3,105.1	3,416.9	3,420.3	3,766
Retained Earnings	302.3	746.3	1,319.5	1,364.4
Working Capital	153.8	454.5	718.12	794
MKT Capitalization	10,447.5	16,594.5	16,380.4	26,426.8
DERIVED VARIABLES	2016	2017	2018	2019
Z1: Working Capital/Total Assets	0.03995	0.10975	0.14801	0.15275
Z2: Retained Earnings/Total Assets	0.07853	0.18022	0.27197	0.26249
Z3: EBIT/Total Assets	0.15467	0.18698	0.17046	0.20061
Z4: MKT Capitalization/Total Liabilities	2.96821	4.94296	4.68292	7.42117
Z5: Revenue/Total Assets	0.80660	0.82512	0.70497	0.72451
Z - SCORE	3.26	4.79	4.64	6.39

RESULT: Ferrari does not face bankruptcy scenario, based on the Z-SCORE model.

Source: team assessment

APPENDIX 19: RISKS

Brand Value. Ferrari's financial performance depends on the perception of the brand, which relies on design, performance, quality, appeal of stores and marketing. Moreover, the market for luxury automobiles is highly competitive and client preferences can change over time, exposing Ferrari to this risk, as it seeks to attract new generations of clients. Finally, the status of the Ferrari brand also depends on the constant success of the Scuderia Ferrari racing team in the Formula 1 World Championship. The success of the Formula 1 racing team has declined over the past several years as the most recent driver's championship and constructors' championship were in 2007 and 2008, respectively. If the Company is unable to attract and maintain the necessary skills to win in international competitions or allocate the needed resources to fund successful racing activities, the appeal of Ferrari products and its identity may suffer.

Growth Strategy. Ferrari currently plans to open additional dealerships and stores in various markets, which have different operative features, including employment, transportation, environmental regulations and legal requirements. Consumer demand, as well as tastes may differ, and as a result, sales may not be successful, or margins may be lower than expected. Consequently, if Ferrari's international growth plans are ineffective, its business and financial condition could be materially affected.

Technological Changes. Developing new automotive technologies is costly and may become even more costly in the future as technology and competition in the industry increase. If the Company's efforts do not lead to any improvements, its sales or profitability may be negatively affected. Ferrari's electrification transition initially kicked off with the first hybrid car €450K SF90 Stradale in the last May, with the aim of having a 60% hybrid-sales mix by 2022 (during 2019 Ferrari experienced an 8% increase in R&D costs due to the emerging hybrid technology, according to the last data provided by Ferrari). An entry-level GT hybrid car positioned below the Portofino, would assist average fleet emissions but it is positioned in a more-competitive segment and exposed to economically sensitive buyers.

Exchange Rate Volatility. The Company usually covers 70/80% of 2-year forward Forex risks, so it only benefits partially from a possible USD appreciation (we estimate FY19 positive impact on EBIT was around +0.75%). Moreover, as of FY16 the company began to shorten the hedging period from 2 years to 1 year and to run an active hedging policy according to their own forecasts about future currency movements. This could represent a risk in case of adverse Forex move. For analysis purpose, we looked at maximum drawdown recorded for EUR/USD during the last decade. As Ferrari only partially hedges the currency exposure, considering a scenario in which the EUR/USD would skyrocket by 14.11%, as happened in 2017, the Company would get a dramatic fall in revenues from USA, by 126M. Given a hedging of the 70% on the USD exchange rate, the negative impact would be of 37,7M on revenues, that is the 4.11% on EBIT. However, we do not see much room for EUR/USD risk-reversals to reprice above end-of-2019 levels in 2020, as EUR/USD strength is likely to be contingent on fiscal expansion in Europe or a resumption of Fed rate cuts, both of which would tend to dampen volatility. On the other hand, were US-China trade conflict to spill over to Europe, this would have the potential to re-establish negative spot-vol directionality and drive EUR/USD risk-reversals back into negative territory, in our view.

Interest Rate Changes. Ferrari subscribed a €350Mln equivalent Revolving Credit Facility maturing in 5 years, bearing interest at a rate per annum equal to the aggregate of EURIBOR, plus a margin ranging from 35 basis points to 90 basis points depending on the applicable Consolidated Total Net Debt to Consolidated Adjusted EBITDA ratio. Although Ferrari has not used the facility yet, in order to analyze the effect of this risk we assume two additive variations that could lead to a potential stress scenario. First of all, we assume a 100 bps rise in the EURIBOR and a spread equal to the average between 30 and 95 bps, this would get to a +0.17% increase in the total costs. Then, we also assume the bank applies a 90 bps spread (i.e. the upper bound of the range) on top of the +1% increase in the EURIBOR, the overall impact on total costs would be a +0.2% rise.

Suppliers and Raw Materials. Among other raw materials, aluminum is key in the production of Ferrari's engines, chassis and several other parts of its products. Most aluminum engine blocks are made of one of the following alloys: 319, A356 or A357. We go through their specific composition:

- The composition of the 319 alloy is given by: 85.8% to 91.5% aluminum, 5.5% to 6.5% silicon, 3% to 4% copper, 1% iron, 1% zinc, 0.5% manganese, 0.35% nickel, 0.25% titanium, 0.1% magnesium.
- The A356 and A357 alloys have a higher percentage of aluminum, 91.1% to 93.3% and small differences in the proportion of the other materials: 6.5% to 7.5% silicon, 0.25% to 0.45% magnesium, 0.2% copper, 0.2% iron, and 0.1% zinc.

Thus, we consider that around 60% of Ferrari's inventories expenses derives from the purchase of aluminum. According to the Company's cash flow statement, in 2018 the inventories' expenses were €74M, thus the costs related to aluminum were €44.4M. For the same year, the total costs of sales sum up to €1623M, so aluminum makes up 2.74% of costs of sales. For analysis purpose, we compared the actual aluminum price to its estimated historical moving average.

At the time of writing, the current price stays below its own moving average indicator, indicating a potential mean reversion (so a possible upside) of roughly +1.5%. Even in that scenario, the resulting increase in total cost of sales would be as much as 4bps. In fact, on an annual basis the most relevant change in the aluminum's price has been of +30.81%, in 2017 – i.e. when the aluminum price skyrocketed to \$2240/Ton – causing an increase in the commodities expenses of +2.74% and an estimated rise in total costs of 84bps. In January 2020 industrial metals prices fell sharply over concerns the Coronavirus outbreak may negatively impact China's downstream metals demand for a longer-than-normal period. Added to that, RMB weakness has acted as a drag on base metals prices. While we take no view on the development of the virus, it has already had a material impact on metals demand. If the effect on global GDP is comparable to the SARS virus, it would imply a demand shock of around 300K Ton in industrial metals. Amidst all the uncertainty, aluminum price held up relatively better – falling much less than copper, zinc and nickel. This relative outperformance was likely due to China and ex-China stocks reaching new lows supported by the current market deficit.



Exhibit : EURO/USD DOLLAR FX SPOT RATE
(source: team assessment)



Exhibit : MA for Monthly Aluminum Price
(source: team assessment)

Brexit. UK EU membership ended at the end of last January, after 46 years. From an economic point, the UK was doing relatively well during its EU membership “outgrowing” Germany and France over that period. Now the Bank of England seems to be more skeptical about the long-term outlook after Brexit, as it believes that “Brexit will continue to weigh on productivity growth over the forecast period”. The future trade regime between the EU and the UK will be one crucial factor determining the long-term outlook for UK trend growth. At time of writing, Bloomberg predicts that, should Brexit uncertainty still hang over the UK economy, the pound would fall below the levels of January 2017, approaching the historical lows of the winter of 1984-85, when it also travelled to 1.1. In that case the GBP/EUR variation would equal -0.08 (current rate is 1.18). As a consequence, since the ASP of a Ferrari car is €300K, the Company will lose €24K per car. It sold 1013 cars in UK in 2019, thus in that case the total loss would amount to €24.3M (-0.65% of total revenues).

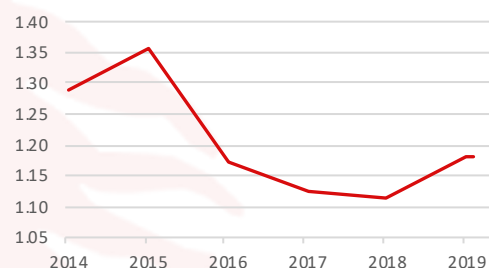


Exhibit : GBP/EURO FX SPOT RATE
(source: team assessment)

Trade War. The news flow on US-China trade has largely become positive. Both sides have signaled that an unwind of some existing tariffs is a possibility, as opposed to merely a ceasefire on new tariffs. In addition, the rhetoric has been mostly upbeat, with China inviting US negotiators for another round of talks and President Trump repeatedly stating that the ‘Phase 1’ deal might be the first in several phases of trade agreements. However, US-China trade relations have been undermined in the last year, so some caution seems warranted even though both sides appear headed for an interim trade agreement that would prevent further damage to the global trading environment. For the year ahead, we expect a tepid recovery to uninspiring trend growth, but with diminished economic and policy risks.

Emerging Markets. Ferrari aims at expanding in the Chinese market where it has a current market share of the 27% in "Luxury Performance Car Industry". Since 2019, Ferrari has spent €699M in R&D, 75% of which dedicated to Scuderia Ferrari, while just €175M were invested into the luxury car division. Assuming the same geographical breakdown of R&D costs as total revenues, we estimate €13M (i.e. roughly 1.9% of R&D costs) will continue to be spent in R&D for the Chinese market. The economic impact of the Coronavirus outbreak on emerging markets could be significant, given the numerous links many EMs have with China. However, if expected sales in China dramatically fall vanishing the related R&D expenditure, the potential impact on Ferrari’s total costs will be approximately null.

The Concorde Agreement. In 2016 Liberty Group’s CEO, Mr. Greg Maffei, said that one of its objectives is to have “much more fairness in prize money” which benefits the minnows, and this could be seen as the end of Ferrari’s bonus. Although the Company does not disclose any official figure, the F1 revenues contribution is expected to break-even in 2022. At time of writing, Ferrari’s total bonuses are ca. €180M and the R&D costs for the racing team are €524M (i.e. 75% of total R&D costs). We perform a stress-test by considering a scenario where Liberty Group decide to cancel those bonuses, thus changing the Concorde Agreement (which would require higher costs for R&D), and assuming an increase in R&D costs (for F1) of +10%. Ferrari’s overall R&D costs would increase to €751M (with an impact on total costs of ca. +3%) and total revenues would decrease of 5%. We highlight this is a very unlikely scenario, given the Ferrari’s veto power.

	Risk	Likelihood	Impact	Mitigation	Strategy
Strategic	Brand Value	1/5	4/5	YES	Management of their robust orderbook and model launches in the long-run to preserve their pricing power/margin.
	Growth Strategy	3/5	3/5	YES	New license agreement, direct entrance in new markets and stores’ network expansion
	Technological Changes	2/5	3/5	YES	Hybridization plan for 2022 and electrification process supported by high R&D expenses
Financial	Exchange Rate Volatility	3/5	2/5	YES	OTC derivatives for hedging purposes
	Interest Rate Changes	1/5	1/5	NO	
	Liquidity	1/5	1/5	NO	
	Suppliers and Raw Materials	2/5	2/5	NO	
Macro	Macroeconomic Scenario	3/5	1/5	YES	Extended geographical presence and unique features that make customers less price-sensitive
	Brexit	2/5	3/5	NO	
	Trade War	3/5	2/5	NO	
	Emerging Markets	2/5	1/5	YES	Adapting continuously to new clients’ preferences
Corporate Regulatory	Shareholder Pressure	2/5	2/5	NO	
	Law and Regulation	4/5	4/5	YES	Investments in Environmentally-friendly technologies
	The Concorde Agreement	3/5	3/5	YES	Right to veto Formula 1 rules

IMPACT	5				
	4	Brand Value			Law & Regulation
	3		Technological Changes; Brexit	Growth Strategy; Concorde Agreement	
	2		Suppliers and Raw Materials; Shareholder pressure	Exchange rate volatility; Trade War	
	1	Liquidity; Interest Rate Changes	Emerging Markets	Macroeconomic Scenario	
		1	2	3	4

Source: team assessment

LIKELIHOOD

APPENDIX 20 : CORPORATE GOVERNANCE

Compliance with the Dutch Corporate Governance Code. Ferrari publishes its report on CG and ownership structure since 2016. Its CG is compliant with all best practice provisions provided by the Dutch Corporate Governance Code (ca. 130) except the following 5:

- The Company does not have a retirement schedule, the term of office for the board members is set until the general shareholder meeting (approximately one year);
- Not all the Management board and supervisor board members are present at the general meeting of shareholders. Usually just the Chairman, the CEO and the Vice-Chairman are;
- The Senior Non-Executive Director, Mr. Sergio Duca, is also the Chairperson of the Audit Committee;
- The Committees are not comprised only of non-executive directors;
- Mr. John Elkann is associated with a direct shareholding in the Company of more than 10%, being also the CEO and Chairman of Exor N.V.

Corporate Governance Quality. We use a Scorecard Model to provide an extensive and comprehensive picture of the quality of RACE's governance under the OECD best practices. We assigned a score from 0 (lowest) to 10 (highest) to each sub-section and then performed a weighted average. In our analysis Ferrari exhibits an overall score of 8.79/10, showing a very high adherence to the OECD best practices.

Disclosure and Transparency (weight: 30%)	Section score: 9.25/10
Are the annual reports drawn-up following internationally accounting standards and disclosed in timely manner?	10
In the annual reports, is all relevant information about board members disclosed?	10
Does the Company have a policy and process to ensure continuous ad hoc disclosure of important matters providing a variety of communication methods (such as Company website)?	10
Does the Company have an annual external audit undertaken by an authorized and independent auditor? Does external auditors' opinion publicly disclosed?	7
Shareholders Rights (weight: 20%)	Section score: 8.5/10
Are basic shareholders rights ensured (to nominate and remove the board of directors and the board of supervisors, to approve major corporate transactions and to share corporate profit)?	6
Are there adequate company systems for shareholder attendance and participation at the AGM?	10
Are dividend and dividend policies transparent and publicly disclosed?	10
Do the Chairman/CEO of the board and the Chairman of external audit attend to the last AGM?	8
Equitable treatment of shareholders (weight: 25%)	Section score: 8/10
Can minority shareholders affect the composition of the board and are directors required to be re-nominated and re-elected at regular intervals?	6
Is there evidence of structures/mechanisms that have the potential to violate minority shareholder rights?	6
Are there mechanisms that provide effective redress for complaints of shareholders? Can small shareholders place an item on the AGM agenda?	10
Are there Company policies that effectively prohibit the misuse of information by directors, management, and staff?	10
Responsibilities of the board weight: (25%)	Section score: 9.25/10
Are there evidence which ensure that board applies high ethical standards (exercises duties of loyalty and care and acts in the interest of the Company and its shareholders)?	10
Is there evidence that the board of directors is responsible for the strategy and business plans of the Company and have responsibility for and oversee the risk management system of the Company?	10
Was there any evidence of non-compliance of the Company over the last year?	7
Does the supervisory board report include discussion on supervision of operation and financial conditions of the Company and performance of the board of directors, management board, and executive officers?	10

Source: team assessment

Board of directors. As stated by the Dutch Law, BoD should contain a minimum of 30% male members and 30% females and Ferrari fully complies with this requirement. RACE has recently excluded Mr. Amedeo Felisa (CEO of Ferrari from 2008 to 2016) and Mr. Lapo Elkann from the BoD to make the decisioning process as independent as possible and to avoid the circumstance that two directors (Mr. Lapo Elkann and Mr. John Elkann) are affiliated with a direct shareholding in the company of more than 10% (Exor N.V.), running the risk of a potential conflict of interest

BOARD	ROLE	INDEPENDENT	OTHER CHARGES	YEAR OF ENTRANCE	BIRTH	COMMITTEE	Background (education and other charges)
John Elkann	Executive Chairman	no	yes	2018	1976	GS	Graduated in Engineering from Politecnico (Turin). Work experience in various companies of the Fiat Group (manufacturing, sales and marketing). Member of the Corporate Audit Staff at General Electric.
Louis C. Camilleri	Chief Executive Officer	no	yes	2017	1955		Degree in Economics and Business Administration from HEC Lausanne (Switzerland). Chairman and CEO of PMI. CEO, Chairman, Senior Vice President, CFO of Altria Group. CEO and President of Kraft Foods International."
Piero Ferrari	Vice Chairman/ Non-Executive Director	no ⁽¹⁾	yes	1988	1945	C	Honorary Degree in Aerospace Engineering from the University of Naples Federico II, Honorary Degree in Mechanical Engineering from the University of Modena and Reggio Emilia. "Cavaliere del Lavoro". President of Piaggio Aero Industries S.p.A. Chairman of the Italian Motor Sport Commission. Different management positions in the motor sport division of Ferrari. Vice president of Banca Popolare dell'Emilia Romagna."
Sergio Duca	Non-Executive Director	yes	yes		1947	A	Graduated with honors in Economics and Business from University Bocconi in Milan, external auditor of significant Italian listed companies through PricewaterhouseCoopers network. Member of the board of auditors of Intesa San Paolo Foundation Onlus. Chairman of the Board of Statutory Auditors of Enel S.p.A. Member of the board of auditors of the ANDAF (Italian Association of Chief Financial Officers). Chairman of PricewaterhouseCoopers S.p.A.

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BOARD	ROLE	INDEPENDENT	OTHER CHARGES	YEAR OF ENTRANCE	BIRTH	COMMITTEE	Background (education and other charges)
Delphine Arnault	Non-Executive Director	yes	yes	2016	1975		Graduated from the EDHEC Business School and the London School of Economics. Consultant at McKinsey & Company. Deputy General Manager of Christian Dior and of Louis Vuitton Malletier. Main board director of LVMH Moët Hennessy Louis Vuitton SA. appointed to the boards of Céline, Christian Dior SE and 21st Century Fox.
Giuseppina Capaldo	Non-Executive Director	yes	yes	2015	1969	A GS C	Degree in Economics and degree in Law from "La Sapienza" University of Rome. Full Professor of Private Law, at "La Sapienza". Independent member of the BoD of Exor S.p.A., Credito Fondiario S.p.A. and Banca Monte dei Paschi di Siena S.p.A. Deputy rector for Resource Planning and Assets and for Strategic Planning at "La Sapienza". Member of the BoD of Ariscom S.p.A. (Italian insurance company)
Eddy Cue	Non-Executive Director	yes	yes		1964	GS C	Bachelor's Degree in Computer Science and Economics from Duke University. Currently serves as Apple Inc.'s Senior Vice President of Internet Software and Services.
Maria Patrizia Grieco	Non-Executive Director	yes	yes	2016	1952	A	Graduated in Law at the University of Milan. CEO at Italtel. CEO of Siemens Informatica. CEO of Olivetti. Director of Fiat Industrial. Board of directors of Bocconi. Chairman of Enel. Chairman of the Italian Corporate Governance Committee.
Adam Keswick	Non-Executive Director	yes	yes	2016	1973		Graduate degree from the University of Edinburgh. Board of Jardine Matheson. Deputy Managing Director of Jardine Matheson. Chairman of Matheson & Co. Deputy chairman of Jardine Lloyd Thompson and director of Dairy Farm, Hongkong Land, Jardine Strategic and Mandarin Oriental. Vice chairman of the supervisory board of Rothschild & Co.
Elena Zambon	Non-Executive Director	yes	yes		1964	C	Bachelor degree in Business Administration at the University "Bocconi" in Milan. Founder of Secofind (multi-family office of the Zambon family). President of the Foundation Zoé - Zambon open Education. Member of the Board of Unicredit and of IIT (Italian Institute Technology). President of Zambon S.p.A., multinational pharmaceutical company. "Cavaliere del Lavoro".

(1) Piero Ferrari is considered independent within the meaning of the NYSE rules
Source: team assessment

Remuneration Policy. The compensation plan for Executive Directors consists of both a fixed and variable component. The variable part is subject to the achievement of pre-established company objectives: cash-based incentives has the function of encouraging the executive directors to focus on the business priorities for the current or next years. Non-executive directors can also grant periodic bonuses for specific transactions, which are considered of strategic importance. There are other customary fringe benefits, such as personal use of aircraft, company car and driver, medical insurance. The compensation committee may provide other benefits to executive directors under certain circumstances. As for the non-executive directors, the compensation is fixed and not dependent on the Company's financial results and there are no incentive plans. Each director can also be entitled to buy one car per annum for personal use, directly from the Company on preferential terms. The Chairman and Vice Chairmen will be entitled to an automobile perquisite of one assigned company-furnished vehicle rotated every two years. (*) 17,108: 11 thousand PSUs and approximately 6 thousand RSUs. Fair Value on Grant Date (September 12, 2018) €80.32-€112.99

Name	Annual fee (€)	Other compensation (€)	Share-based compensation (equity incentive plan): Awards granted
John Elkann	79,554	13,025	
Louis C. Camilleri	270,412		17,108*
Piero Ferrari	68,149	12,397	
Sergio Duca	94,890		
Delphine Arnault	63,889		
Giuseppina Capaldo	73,781		
Eddy Cue	68,149		
Maria Patrizia Grieco	72,408		
Adam Keswick	63,889		
Elena Zambon	72,030		

Source: team assessment

Shareholder Base. Ferrari has roughly 190 million shares outstanding, and 46% of these are held by 4 major shareholders: Exor N.V. (FCA's parent company and Agnelli family holding company) is the main shareholder, with ca. 23.9% of shares, Mr. Piero Ferrari with ca. 10%, Baillie Gifford & Co with 7.3% of shares and T. Rowe Price Associates, Inc. with 4.7%. Free float is ca. 66.7%. a shareholders' agreement guarantees a common view of any general meeting and certain obligations in case of shares transfer (i.e. pre-emption right in favor of EXOR and right of first offer for Piero Ferrari).

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