Equity Valuation

Ferrari N.V.

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Dissertation written under the supervision of Professor José Carlos Tudela Martins

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Abstract

Title: Equity Valuation - Ferrari N.V.

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The aim of this dissertation is to determine the target price of Ferrari, a leading player in the luxury performance car industry and the most successful race team in the Formula 1 history, in order to issue an investment recommendation relative to its market price. First, analyzing the state-of-art of the equity valuation techniques, it was concluded that the WACC-based DCF valuation represented the most suitable approach for the valuation of Ferrari. In addition, it was than complemented by a relative valuation, using forward-multiples. The valuation itself is based on a detailed analysis of the industry in which the company is positioned, the forces that it faces in this environment, and its historical performance and future prospects. It results in a median target price of EUR 157.33 within the range of EUR 153.44-161.30. Compared to the trading price as of 30th April 2020, at EUR 143.40, this represents an upside potential of 9.71%, which is then translated in a BUY recommendation. Finally, the main assumptions and the stock rating obtained are confronted with an equity report issued by a leading investment bank, namely UBI Banca, and the general consensus in the market. Despite minor differences in some basic assumptions, the recommendations share numerous commonalities and appear in line with the mean consensus.

Resumo

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Palavras-chave: Ferrari, Fórmula 1, Indústria de Carros de Luxo, Avaliação de Empresas

O objetivo desta dissertação é determinar o preço-alvo da Ferrari, empresa líder na indústria de carros de luxo e a equipa de corrida mais bem-sucedida na história da Fórmula 1, a fim de emitir uma recomendação de investimento relativamente ao seu preço de mercado. Primeiramente, tendo em conta as técnicas de avaliação de capital uma empresa, concluiu-se que o modelo de avaliação DCF, baseado na taxa de desconto WACC, representa a abordagem mais adequada para a Ferrari. Em segundo plano, esta foi complementada por uma avaliação relativa, baseada no modelo de avaliação forward-multiples. A avaliação em si demonstra uma análise detalhada da indústria onde esta empresa se posiciona, os desafios que enfrenta no seu meio, a sua performance histórica e as suas perspetivas futuras. A avaliação resulta num preço-alvo médio de EUR 157.33, incluindo-se numa variação de valores entre EUR 153.44-161.30. Comparativamente ao preço de EUR 143.40, negociado a 30 de Abril de 2020, este representa uma valorização positiva de 9.71%, traduzindo-se, assim, numa recomendação de compra. Finalmente, o conjunto das premissas mais relevantes e classificação das ações obtidas são confrontadas com os relatórios de capital emitidos por um banco de investimento líder, o UBI Banca, e o consenso generalizado de mercado. Embora existam diferenças mínimas em pressupostos básicos, as recomendações prestadas nesta dissertação partilham diversos pontos comum e situam-se em linha com o consenso médio.

Acknowledgements

This dissertation represents an important milestone in a long journey of academic and personal growth. Indeed, it marks the completion of my studies and beginning of my career, which will surely bring further growth and learning.

Throughout this path, I have always been surrounded by loving relatives and friends who have spurred me to face new challenges and sustained me in difficult moments. Especially, I would like to thank my parents and my brother for their unconditional support and endless encouragement. They are my center, around which my life has revolved and will always continue to do so.

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List of Abbreviations

DCF Discounted Cash Flow
FCFF Free Cash Flow to the Firm
WACC Weighted Average Cost of Capital
TV Terminal Value
EV Enterprise Value
EBIT Earnings Before Interests and Taxes
CAPEX Capital Expenditures
DDM Dividend Discount Model
DPS Dividend Per Share
k_e Cost of Equity
g Growth Rate
DIV Dividend
FCFE Free Cash Flow to Equity
TAX Tax Rate
APV Adjusted Present Value
PV Present Value
α Alfa
D Debt
E Equity
k_d Cost of Debt
YTM Yield to Maturity
r_f Risk Free Rate
β Beta
R_m Market Return
R_i Stock Return
CAPM Capital Asset Pricing Model
ERP Equity Risk Premium
ε Error
β_e Beta Levered
β_u Beta Unlevered
M&A Merger and Acquisition
EBITDA Earnings Before Interests, Taxes and Depreciation and Amortization
P/E Price to Earnings
PER Price to Earnings Ratio
EPS Earnings Per Share
SWOT Strengths, Weaknesses, Opportunities and Threats
CAGR Cumulative Asset Growth Rate
N.V. Naamloze Vennootschap (Anonymous Company in the Netherlands)
FCA Fiat Chrysler Automobiles
NYSE New York Stock Exchange
MTA Mercato Telematico Azionario
IPO Initial Public Offering
SVM Small Volume Manufacturer
CCC Cash Conversion Cycle
APAC Asia-Pacific
EMEA Europe, Middle East, and Africa

ROIC	Return on Invested Capital
R&D	Research and Development
FFS	Ferrari Financial Services
GmbH	Gesellschaft mit beschränkter Haftung (Limited Warranty Company)
DSO	Days Sale Outstanding
DPO	Days Payable Outstanding
DSI	Days Sale Inventory
p.p.	Percentage Points
hp	Horse Power
Q	Quarter

Introduction

The valuation of a company appears relevant not only for its shareholders but also for several stakeholders interacting with it. This process is a key element for the management to make thoughtful and strategic decisions, and for the modern economic system, among others, to efficiently allocate capital resources amongst various market participants.

In line with that, the purpose of this dissertation is to determine the fair value of Ferrari's share price as of April 30th, 2020. The company, one of the most recognized and valuable brands worldwide, is nowadays a complex and established system, which has to be analyzed in detail to perform an unbiased valuation. The final objective is to identify if the company is under- or over-valued or fairly priced by the market. This will be summarized through an investment recommendation, according to the difference between the intrinsic value obtained and the current price.

Firstly, a literature review is developed in order to identify the most suitable valuation methods. Afterwards, a detailed strategic analysis of the context, in which the company positions itself, is presented including the competitive forces that it faces. Starting more broadly from the luxury goods market and then, going into more detail, investigating the luxury performance cars industry and the company itself. Subsequently, its historical performance is scrutinized to evaluate future prospects. In order to give as much transparency as possible, following is an explanation of the main assumptions on which the models rely on is then presented. Finally, the value achieved is compared to the one reached by the equity research assessment of an accredited investment bank, namely UBI Banca and the general consensus.

Literature Review

The following literature review elaborates the state-of-art of the most commonly used equity valuation techniques. Its objective is to assess the suitability of these approaches in order to adopt the most appropriate ones for the valuation of Ferrari.

Introduction to Valuation

Broadly speaking, "Value is the defining dimension of measurement in a market economy" (McKinsey, 2010), as people invest with the expectation that their investment will grow by a sufficient amount above its cost to compensate them for the risk they endured. It is a fundamental measure of performance as it considers long-term interests of all the stakeholders in a company.

Furthermore, "Valuation can be considered the heart of finance" (Damodaran, 2005). Every sensible decision-making process requires to understand what drives the value of a business and how it is estimated.

Valuation Models

The process of determining the value of a firm is not straightforward, as testified by the wide range of models deployed by practitioners. Even though these procedures are based on different assumptions, they share commonalities and can be classified in broader terms. According to Damodaran (2005), they can be divided in four different groups but, in the following paragraphs, only those considered relevant for the valuation of the target company are assessed. These are identified by the Discounted Cash-Flow Valuation (DCF) and Relative Valuation. For what concerns the other approaches recognized by Damodaran, namely the Liquidation and Accounting Valuation and Contingent Claim Valuation, a brief explanation of the procedures, limitations, and reasons why they do not meet the criteria to be used in the valuation of Ferrari, are presented in Appendix 1-2.

Discounted Cash-Flow Valuation

According to the DCF approach, the value of an asset is the present value of its expected cash flows, discounted at a rate reflecting its riskiness. However, this approach presents some limitations that have to be considered. Contrary to an asset, a business is an on-going entity with assets already in place and assets it expects to invest in in the future, adding layers of complexity (Damodaran, 2005).

According to Damodaran (2005) “the value of a business is the sum of the values of the individual assets owned by the business”. Hence the value of any firm is primarily determined by four factors – its capacity to generate cash flows from its assets in place, the expected growth rate of these cash flows, the length of time it will take to reach a stable growth, and the cost of capital (Damodaran, 2014).

$$Enterprise\ Value\ of\ a\ firm = \sum_{t=1}^{T=\infty} \frac{FCFF_t}{(1+WACC)^t} = \sum_{t=1}^{T} \frac{FCFF_t}{(1+WACC)^t} + \frac{TV_{EV}}{(1+WACC)^T} \quad [1]$$

The DCF is often referred to as a forward-looking approach, because it depends more on future expectations rather than historical results, and inward-looking, relying on fundamental expectations, and to a lesser extent on external factors. Its accuracy largely depends on the quality of assumptions regarding the Free Cash Flow to the Firm (FCFF), Terminal Value (TV), and Discount Rate (WACC). Due to these limitations, usually a range of values and different scenarios are expressed to gauge the sensitivity of the valuation to various operating assumptions.

Free Cash Flow to the Firm

The first step consists in determining the total value of the firm to all investors represented by the Enterprise Value (EV). It can be interpreted as the net cost of acquiring the firm’s equity, taking its cash, paying off all debt, and thus owning the unlevered business, as shown in the following formula (Berk & DeMarzo, 2014).

$$Enterprise\ Value = Market\ Value\ of\ Equity + Debt - Cash \quad [2]$$

The firm’s enterprise value is computed through the FCFF, which measures the cash generated by the firm available to pay all investors and can be defined as follows:

$$FCFF = EBIT * (1 - Tax) + Depreciation - Capex - Change\ in\ Net\ Working\ Capital \quad [3]$$

Dividend Discount Model

The Dividend Discount Model (DDM) represents the oldest variant of the DCF (Damodaran, 2005). It is a method for estimating the intrinsic value of a share based on the discounting of dividends.

$$Equity\ Value\ of\ a\ firm = \sum_{t=1}^{T=\infty} \frac{E(DPS_t)}{(1+k_e)^t} \qquad [4]$$

The model itself is based on the rationale of the present value rule. The expected dividends are not directly observables, so the model requires to make assumptions about future growth rates in earning and payout ratios. The simplest forecast for the firm's future dividends states they will grow at a constant rate, g, forever. This is known as the Constant Dividend Growth or Gordon Model and is defined as follows:

$$Equity\ Value\ of\ a\ firm = \frac{Div_1}{k_e - g} \qquad [5]$$

In other words, the value of a company depends on the dividend level for the coming year, divided by the cost of equity adjusted by the expected growth rate of dividends.

Free Cash Flow to Equity

The Free Cash Flow to Equity (FCFE) model does not represent a radical departure from the traditional DDM. In fact, it discounts potential dividends, rather than actual dividends (Viebig, Poddig & Varmaz, 2008). FCFE are the cash flows, after funding investments and interest payments, which a company could distribute to its shareholders. Regarding the discount rate, it represents the risk associated with the cash flows, hence the cost of equity is the investor's required return for holding a stake of equity in the company.

$$Equity\ Value\ of\ a\ firm = \sum_{t=1}^{T=\infty} \frac{FCFE_t}{(1+k_e)^t} = \sum_{t=1}^{T} \frac{FCFE_t}{(1+k_e)^t} + \frac{TV_E}{(1+k_e)^T} \qquad [6]$$

Damodaran (2005) provides a measure of FCFE that captures the cash flow left over as follows:

$$FCFE = Net\ Income + Depreciation - Capex - \Delta\,Working\ Capital + Net\ Borrowing \qquad [7]$$

Another way to compute the FCFE is to derive it from the FCFF, deducting net interest and principle payments to debt holders as well as adding new debt borrowings (Fernandez, 2013).

$$FCFE = FCFF - Interest * (1 - \tau) + Net\ borrowing \quad [8]$$

Finally, the net debt of the firm has to be added to the equity value in order to obtain the enterprise value (Oded & Michel, 2007).

Adjusted Present Value

The Adjusted Present Value (APV) approach is one variant of DCF models. It derives from the theory of Modigliani & Miller, who proposed that in a market with no taxes (among other things), a company's choice of financial structure will not affect the value of its economic assets. Only market imperfections, such as taxes and distress costs, affect the EV (McKinsey, 2010).

The APV model assesses the value of a business first, without effects of debt, and then considers the marginal impact on value of borrowing on the business' value. In general, debt financing creates tax benefits but at the same time the risk of bankruptcy increases. The value of a firm can be written as follows:

$$\begin{aligned} EV = {} & Value\ of\ Business\ with\ 100\%\ equity\ financing \quad [9] \\ & + PV[E(Tax\ Benefits\ of\ Debt)] - E(Bankruptcy\ Costs) \end{aligned}$$

When the capital structure of a company is constantly changing it is preferable to value the company with the APV approach, which appears more reliable and flexible. On the other hand, some practitioners tend to overestimate the value of the business by ignoring the expected bankruptcy costs which are difficult to estimate (McKinsey, 2010).

Inputs for DCF Model

Weighted Average Cost of Capital

FCFF are the cash flows available to all investors, so it is independent from the capital structure in place. Consistent with this definition, they must be discounted using the weighted average cost of capital (WACC), representing the rate of return that investors expect to earn from investing in the company (McKinsey, 2010).

Its main components are identified by: the cost of equity, the after-tax cost of debt, and the company's target capital structure. Since none of these variables are directly observable, various models must be employed and assumptions have to be made in order to measure each component. The models used estimate the expected return on alternative investments with similar risk using market prices. In its simplest form, the WACC equals the weighted average of the after-tax cost of debt and cost of equity, which should be weighted using target levels of debt and equity to value.

$$WACC = \frac{D}{D+E} * k_d * (1-\tau) + \frac{E}{D+E} * k_e \quad [10]$$

For mature companies, the target capital structure is often approximated by the company's current debt-to-value ratio, using market values of debt and equity.

Cost of Debt

Different methods exist to approximate the after-tax cost of debt. For an investment-grade firm with publicly traded debt, the most reliable process is to use the company's after-tax yield to maturity (YTM) on its long-term debt. For companies whose debt trades infrequently, the company's debt rating has to be considered to estimate the YTM. Since free cash flows are measured without interest tax shields, the cost of debt must be transformed on an after-tax basis using the company's marginal tax rate.

Alternatively, if the company does not have publicly traded debt, but presents outstanding debt, a synthetic rating based on financial ratios can be performed. A simple approach is to play the role of a ratings agency and assign a rating to a firm based upon the interest coverage ratio (EBIT/Interest expense) of the company. Subsequently, it will be translated into a *Spread* that can be added back to the identified risk-free rate, and considering the marginal tax rate of the company, the after-tax cost of debt will be reached as the following formula suggests:

$$After - tax\ Cost\ of\ Debt = (Risk - Free\ Rate + Default\ Spread) * (1 - \tau) \quad [11]$$

Cost of Equity

The cost of equity is the required return on shareholders' equity, and it is composed by three factors: the risk-free rate, the market risk premium, and a company-specific risk adjustment. The most commonly used approach to estimate it is through the Capital Asset Pricing Model (CAPM). Other approaches commonly used include the Fama-French Three-Factor Model and Arbitrage Pricing Theory. The three methods differ primarily by how they define risk. The CAPM defines a stock's risk as its sensitivity to the stock market, identified by its Beta (β), as shown in the following formula:

$$E(R_i) = r_f + \beta_i * [E(R_m) - r_f] \quad [12]$$

Despite criticism, it is believed to remain the best model for estimating the cost of equity if the objective is to develop a WACC to use in a company valuation (McKinsey, 2010).

Risk-free Rate

Theoretically, the risk-free rate represents the time value of money and is the rate of return an investor receives when investing in an asset with no default risk (Fernández, 2007). Practitioners usually focus on long-term government default-free bonds. Although not necessarily risk free, in the United States and Western Europe they present extremely low betas (McKinsey, 2010).

Ideally, each cash flow should be discounted using a government bond with the same maturity. For simplicity, most choose a single YTM from the government that best matches the entire cash flow stream being valued. When valuing European companies, the 10-year German Bond is considered, which presents higher liquidity and lower credit risk than bonds of other European countries.

With the intention of modelling inflation consistently, between the cash flow and discount rate, the government bond yield is denominated in the same currency as the company's cash flow to estimate the risk-free rate.

Equity Risk Premium

The Equity Risk Premium (ERP) is defined as the difference between the market's expected return and the risk-free rate. Nowadays, it is arguably one of the most debated issues in finance, and different methods exist to measure it. Estimating future risk premium by measuring and extrapolating historical returns is surely the most common approach. This process consists of calculating the premium relative to long-term government bonds, using an arithmetic average of longer-dated intervals and adjusting the results for econometric biases.

Damodaran (2005) developed a simple process to estimate the long-term equity risk premium, that is summarized in the following formula.

$$ERP = Base\ premium\ for\ mature\ equity\ market + Country\ Premium \qquad [13]$$

However, it is common practice to focus on the difference between a well-diversified and value-weighted index and the risk-free rate considered. In this case the index, which is selected to represent the market in which the company operates and competes, is used as a proxy for the market return.

Beta

According to the CAPM, a stock's expected return is driven by its beta, which represents a stock's incremental risk to a diversified investor, where risk is defined as the extent to which the stock covaries with the aggregate stock market. In other words, it measures how much the stock and entire market move together (McKinsey, 2010).

The process of measuring a raw beta is made through a linear regression, and the following steps consist of improving the estimate using industry comparable and smoothing techniques. In the empirical estimation of beta, the most common regression used to obtain a company's raw beta is the market model:

$$R_i = \alpha + \beta_i R_m + \varepsilon \qquad [14]$$

Afterwards, the precision of beta estimation needs to be improved using industry betas. Relying on Modigliani & Miller's theories, the company's beta equals the industry-derived unlevered beta, levered to the company's target capital structure, through the following equation:

$$\beta_e = \beta_u * (1 + \frac{D}{E}) \quad [15]$$

Finally, if few comparable companies exist, an alternative is beta smoothing. This mechanism was proposed by Marshall Blume, who observed that betas revert to the mean.

$$Adjusted\ Beta = \frac{1}{3} * (1) + \frac{2}{3} * (Raw\ Beta) \quad [16]$$

In accordance to this theory smoothing dampens extreme observations toward the overall average.

Terminal Value

The fundamental value of a firm is theoretically the present value of its future cash flows. As it is impossible to estimate cash flows until infinity, analysts usually estimate the present value of future cash flows during a limited forecasting period. The TV of a company estimates the value of the business after this explicit period and it is not unusual that it captures the large majority of the total enterprise value (Viebig et al., 2008). The stable growth model is usually used to reach the TV, which can be resembled by the following equation:

$$Terminal\ Value = \frac{Cash\ Flow\ to\ Firm_n * (1 + g)}{(WACC - g)} \quad [17]$$

Perpetuity Growth Rate

The growth rate is among the most important variables in the models used in valuing a company. According to the stage of growth the company will experience, beyond the explicit forecasting period, and the flexibility required for the valuation, different methods are available. The Gordon growth model is considered the standard method, but its use is limited to firms that are growing at stable rates that can be sustained forever. The main consideration to bear in mind is that the firm’s growth rate usually should be subject mainly to two upper limits, the GDP growth rate of the economies plus inflation where it operates and the expansion of the industry in which is positioned.

Relative Valuation

As opposed to the DCF method, which attempts to estimate the intrinsic value of a company based upon its capacity to generate cash flows in the future, a relative valuation seeks to estimate the value of a business, based on how ‘‘comparable’’ businesses are priced on the market (Damodaran, 2010). The underlying concept is the law of one price, which states that on average in an efficient market, similar assets should trade at similar prices (Esty, 2000). In practice, even though the market is efficient, similar firms are hard to identify or do not always exist. Due to its simplicity, this approach appears to be widely used among practitioners. Usually, it is considered to be a supportive valuation to a fundamental approach in order to probe the assumptions made in the latter method, but it also provides critical insights into what drives value in a specific industry (McKinsey, 2010).

Independent of the specific context, the multiples valuation method consists of four steps. The first step consists of selecting the value relevant measures. Afterwards, it is necessary to identify comparable firms, which subsequently allows the estimation of the synthetic peer group multiples. Finally, these latter must be applied to the corresponding value driver of the target firm to secure a value estimate (Andreas, 2006). In doing so, the value driver in question is treated as a summary statistic for the value of the company (Bhojraj, Lee & Ng, 2003).

Inputs for Relative Valuation

Identification of Comparable Companies

Following the shareholder value concept of Rappaport (1981), the peer group should be represented by a basket of firms or corporate transactions, whose profile of expected cash flows is comparable to the target company. These firms should present similar operating and financial characteristics as the firm being valued, in particular analogous prospects of key value drivers such as profitability, growth, and risk (Palepu, Healy & Bernard, 2000).

Different approaches exist to select the peer group. Usually practitioners rely on the “guideline public company method”, which consists of selecting firms from the same industry. Therefore, it simplistically implies that companies within the same industry have similar operating and financial characteristics (Andreas, 2006). This method becomes more difficult to apply when there are relatively few firms in a sector and differences in risk, growth and cash flow profiles within the industry are large.

Otherwise, a set of multivariate data analysis techniques can be deployed such as the cluster analysis. Its aim is selecting and grouping homogeneous elements in a data set based on their similarity. However, its quality depends on the metrics chosen, and therefore on how the distance is calculated.

Multiples

Multiples measure some aspect of a company's financial characteristics, determined by dividing one metric by another. According to the data considered, multiples can be identified as trailing or forward-looking. The former is based on historical data, while if the value driver refers to a forecast, it is identified as a forward-looking multiple (Benninga & Sarig, 1998). Furthermore, Liu et al. (2002) have proven that in the context of a valuation these latter multiples outperform the accuracy over others (Pinto et al., 2015). In fact, relying on the assumptions that the value of a firm equals its discounted stream of expected cash flows, forward-looking multiples appear more appropriate. In practice, their limitation is that value driver estimates must be evaluated, which depend on commercially available services (Andreas, 2006).

Furthermore, multiples can be identified as intrinsic multiples, if they are derivations of fundamental equity valuation models, which aim at estimating the intrinsic value of a firm, or market multiples, if they inform about the market's opinion of a firm's valuation relative to its competitors. Traditionally, practitioners prefer to rely on equity value multiples, to avoid any adjustment for net debt as in the case with entity value multiples, that are based on the EV of a firm.

The choice of multiples to adopt can differ widely by sector, as noted by Fernandez (2001). Usually, P/E ratio and EV/EBITDA multiples are among the most used multiples. However, the former presents the disadvantages that different accounting policies can affect net income and the opportunity managers have, to arbitrarily lever multiple by changing capital structure (Frykman & Tolleryd, 2003). Moreover, the latter does not consider any information further down in the income statement such as income from minority holdings or cash earnings and it also ignores the freedom managers enjoy adding value through skilled tax management (Damodaran, 2005).

Final Consideration

The final choice, regarding which model to rely on in valuing Ferrari, was based on the considerations of the company's specific characteristics and positioning, in conjunction with the strengths and limitations that characterize each approach so far analyzed. Hence, the DCF model was considered, and acknowledged to be the most reliable method recognizing that Ferrari is expected to maintain its current capital structure, overcoming the limitations embodied in the APV. Furthermore, contemplating different future series of development, both a scenario and a sensitivity analysis were implemented considering possible variations in main assumptions. Finally, with the intent to smooth inaccuracies in the DCF which is highly dependent on hypothesis, a relative valuation was then incorporated. In particular, even though a wide set of multiples were considered, the model relies on *EV/EBITDA* and *P/E* multiples. The rationale is to include an operating performance measure, which is not affected by different tax rules, and to account for risk and EPS growth, given the fact that the luxury industry reports solid earnings and operates with similar capital structures. Blending together the DCF and the Relative Valuation results the final target price was obtained.

Strategic analysis

Before getting to the heart of the evaluation, it appears crucial to analyze and understand the business environment in which Ferrari operates and its strategic performance. In this context the external environment will be examined first, starting from a macroeconomic point of view and proceeding with an analysis of the company since its IPO in 2015, concluding with future prospects, that will be analyzed further on in this dissertation, anticipated with a SWOT analysis.

Industry Analysis

The industry analysis appears essential to better understand how the industry dynamics work for the specific market examined, and what is the context in which a company is positioned in. In the following paragraphs both the automotive and luxury markets are going to be evaluated.

Luxury Goods Market

According to the 17th edition of the Bain Luxury Study, the luxury goods market continues to "shine". It is composed by nine segments, led by luxury cars, personal luxury goods and luxury hospitality, which combined account for more than 80% of the total market. Furthermore, a radical shift in geographical spending is arising, driven by Chinese consumers' appetite for luxury goods. Indeed, their share of global luxury spending continued to increase accounting for 33% in 2018, and by 2025 it is expected to reach 46%. In particular, as presented in *Figure 1*, luxury cars sales continued to dominate the market, growing 5% at constant exchange rates to 495 billion euros, with a CAGR around 8.5-9% between 2010 and 2017.

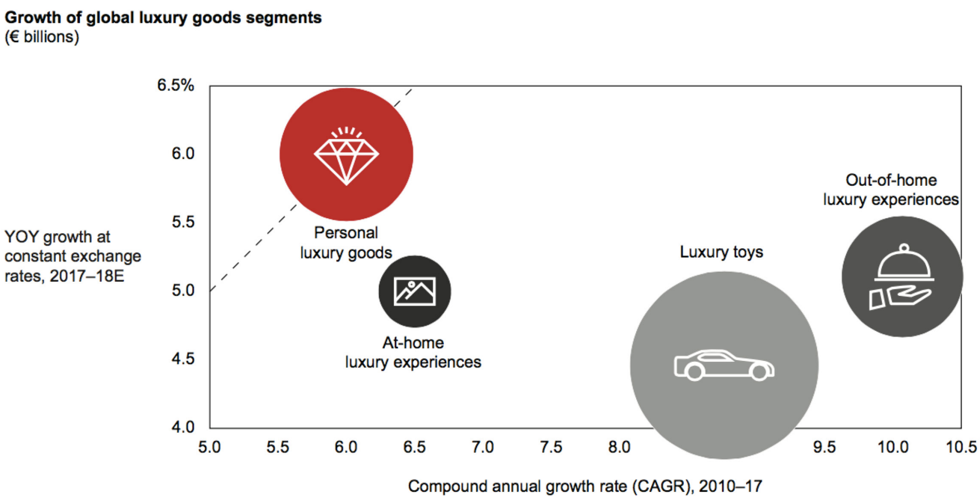


Figure 1: Growth of Global Luxury Goods Segments (2010-2017) - Source: Bain & Company

Regarding the future, the same study expects market fundamentals to remain favorable for the luxury goods market. However, sociopolitical issues, commercial policies and potential soft recessions could make for a bumpy road in the short term.

Luxury Performance Car Industry

Historically, the luxury performance car market has followed fairly closely growth patterns in the general luxury goods market. Even though, global macroeconomic conditions generally affected this segment, Ferrari and other manufacturers have proven themselves quite resilient. As shown in *Figure 2*, Ferrari's volumes present lower volatility than its competitors. As testified during the Subprime Crisis and the stock market slide at the end of 2018, differently from Ferrari, the luxury performance car market has been subject to further economic downturn and stagnation in the broader economy.

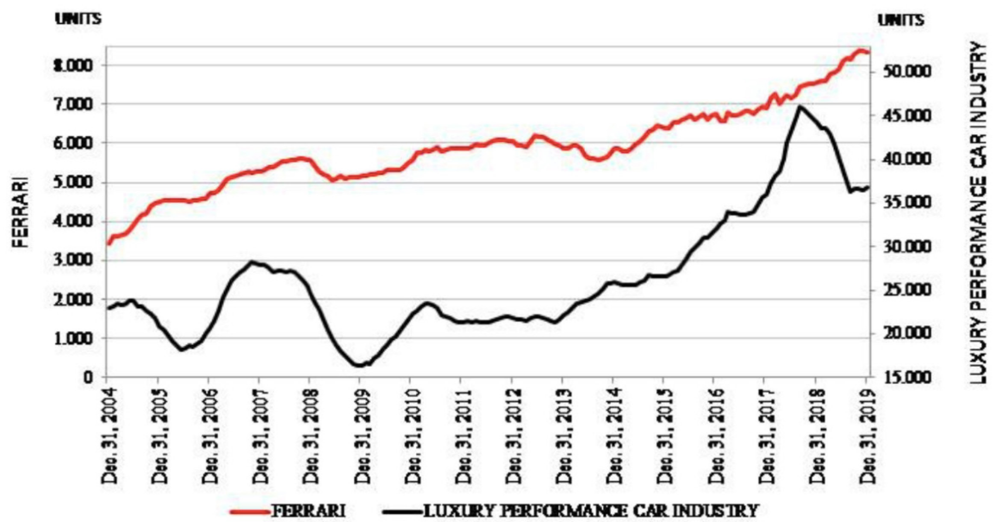


Figure 2: Ferrari vs Luxury Performance Car Industry Production Evolution (2004-2019) – Source: Ferrari 2019a

This is a result of its low volume strategy, the increase of new product launches and a sustained period of wealth creation, led by Asian countries and to a lesser extent Americas, widening the base of potential consumers. In 2019, the company had a market share of 23% in the luxury performance car market; with 25% of market share in the sports car segment and 19% in the GT segment. *Figure 3* shows Ferrari's market shares in 2019 based on volumes in its largest 22 markets by geographical area, testifying for the company's resilient presence with a market penetration between 20% and 30%.

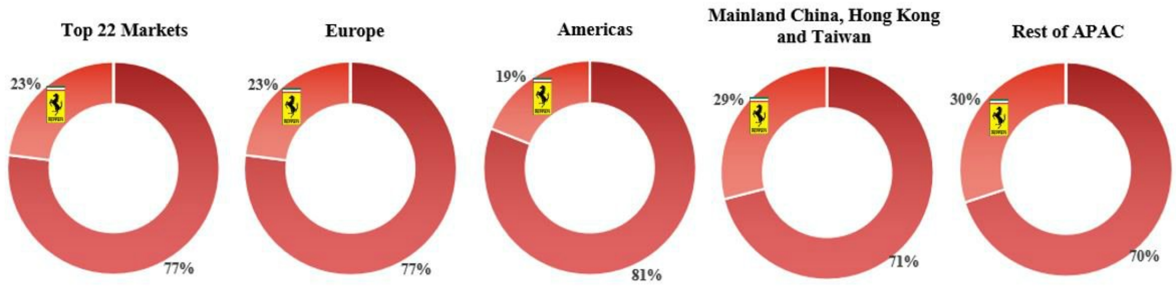


Figure 3: Market Shares of Ferrari Based on Volumes by Geographical Area – Source: Ferrari 2019a.

According to the "*Luxury Car Market – Growth, Trends, and Forecast (2019–2024)*" report, the global luxury car market is anticipated to register a CAGR of about 6.2% during the forecasted period (2019–2024), propelled by an increase in disposable income around the world.

Automotive Players within Luxury Goods Market

Ferrari defines its target market for luxury performance cars as two-door cars powered by engines producing more than 500hp with a retail price in excess of EUR 200,000.

Competition in the luxury car market is concentrated in a rather small number of manufacturers, including large automotive companies that own luxury brands as well as small manufacturers focused on luxury cars, as shown in the following figure.

Ferrari's Competitors on its Sport Models

Ferrari's Competitors on its GT Range Models

Figure 4: Ferrari's main competitors in the Sport Model and GT Range Model Segments

As testified by *Figure 2*, Ferrari represents a unique position within the luxury car market. With approximately 10,000 cars manufactured in 2019 a comparison with BMW, with more than 2.5 million units produced, or Porsche with roughly 300,000 units results not very effective. On the other hand, competitors more in line with Ferrari characteristics such as Lamborghini or

McLaren are not publicly traded. For this reason, a cluster analysis has been performed, including companies in the automotive and luxury industry, analyzing key indicators to better understand Ferrari's positioning. Overall, brand's strength, product attractiveness, performance, style, novelty and innovation, as well as new product launches are the main driver of competition in this sector.

High-Net-Worth Individuals (HNWIs)

Considering the average retail price set by Ferrari, its customer base appears represented by High-Net-Worth Individuals (HNWIs). It is a term conceived by the financial services industry, to identify a subject with liquid assets above a certain amount. In particular, Ferrari targets people in the high-end of this classification, represented by Ultra-High-Net-Worth-Individuals, defined as people with investable assets of at least $30 million.

The *Capgemini World Wealth Report* reveals that in 2018, global HNWI population and wealth declined respectively by 0.3% and nearly 3%, for the first time in seven years, primarily driven by a slump in equity-market performance and slowing economies in key regions. As presented in *Figure 5*, between 2011 and 2017 the number of HNWI registered a CAGR of 8.7% mainly driven by Asia-Pacific, with overall growth of 92%, compared with a global growth of 62% led by North America and Europe.

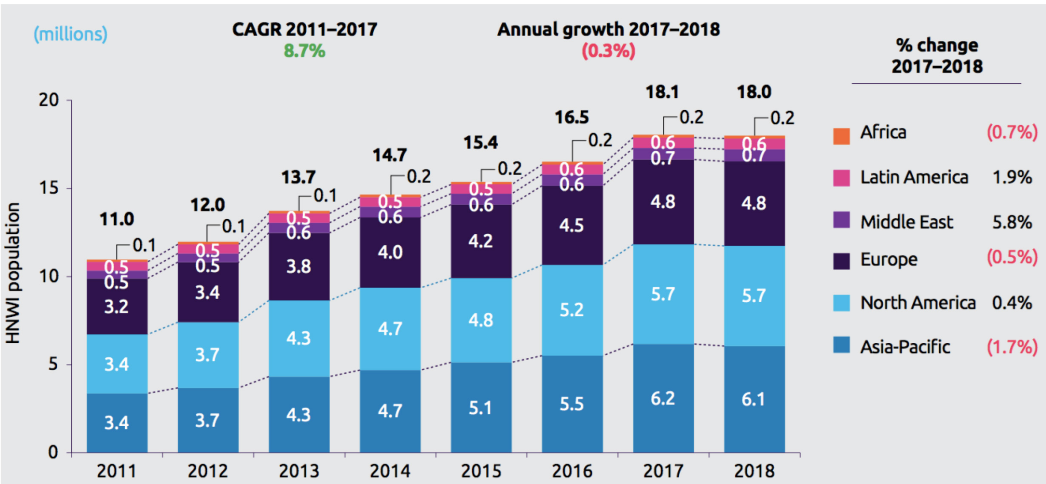


Figure 5: Number of HNWI by Region (millions), 2011-2018 – Source: Capgemini World Wealth Report

The same report projects global HNWI wealth to exceed $100 trillion by 2025. The required 2017-2025 compound annual growth rate of global HNWI wealth has dropped to 5.3% (from 6.1% estimated in 2016), thanks to Asia-Pacific's substantial growth.

Company Overview

Ferrari N.V, founded in 1939 by Enzo Ferrari and headquartered in Maranello (Modena, Italy), is among the world's leading luxury brands, focused on the design engineering, production and sale of the world's most recognizable luxury performance sports car. It is also widely known for its Formula 1 racing team *Scuderia Ferrari*, the most successful team in its history. A detailed history of the company is presented in Appendix 3.

Since 1988 FCA Group owned 90% of Ferrari and the remaining 10% was held by Enzo Ferrari's son, Piero Ferrari. At the beginning of 2016, the separation from FCA Group was completed, making Ferrari an independent, publicly traded company (see Appendix 4 for further details about Ferrari's IPO and Spin-Off). To date, it is listed on NYSE and on MTA under the ticker RACE. In 2019, Ferrari shipped 10,131 cars in over 60 countries worldwide, pursuing a low volume production strategy in order to maintain a reputation for exclusivity and scarcity among purchasers, carefully managing the production volumes and delivery waiting lists to promote this reputation.

Ownership Structure

As of February 7th, 2020, Ferrari presents the following shareholder structure, as shown in *Figure 6*.

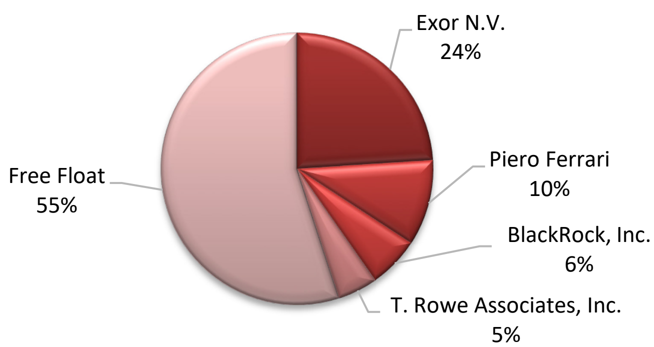
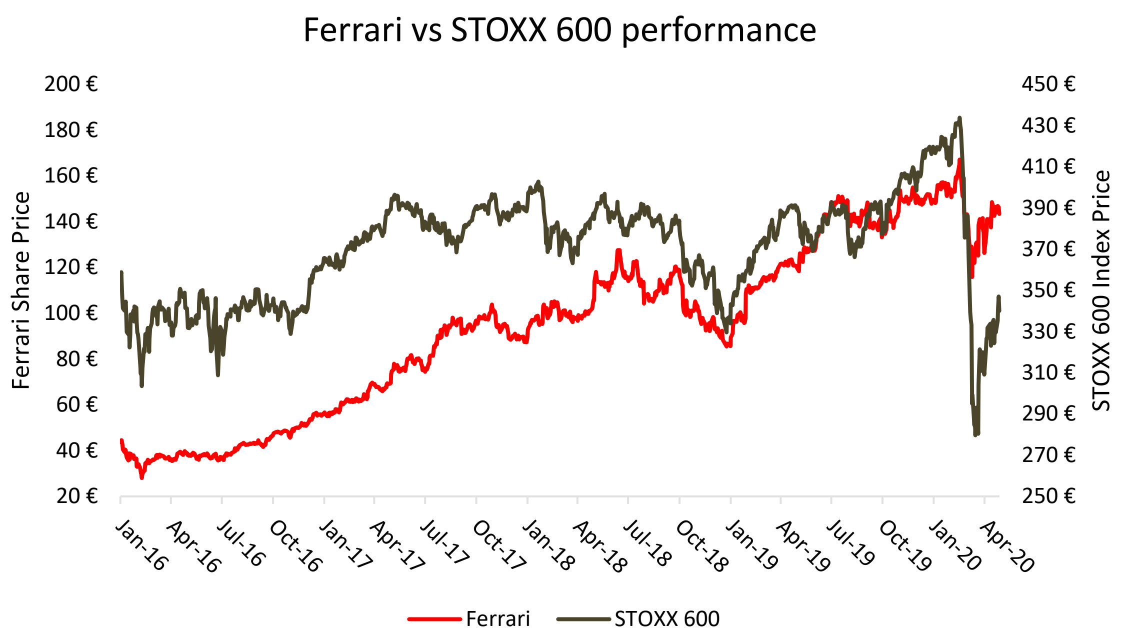


Figure 6: Ferrari Shareholders Structure - Source: Ferrari 2019a

As a result of the loyalty voting program, a relatively large proportion of voting powers are concentrated in a relatively small number of shareholders exercising significant influence. Furthermore, the same mechanism encourages long-term shareholders, through the issue of special voting shares to eligible holders of common shares (see Appendix 5 for further details). Exor is the largest shareholder of Ferrari, owning approximately 24% of outstanding shares and voting power of 36% (see Appendix 6 for detailed information about Exor). Piero Ferrari holds 10% of outstanding common shares with 15% of voting power. Furthermore, BlackRock, Inc. and T. Rowe Price Associates, Inc. are among the major shareholders that own, directly or indirectly, common shares in excess of 3%, holding voting rights, with a stake of 6.1% and 4.7%, respectively, while the remaining part, equal to 55%, is held by the public. Based on the information in Ferrari's shareholder register, approximately 58 million common shares (31.4% of outstanding shares) were held in the United States, with approximately 1,850 record holders.

Share Price Performance

Ferrari's share price performance experienced a tough post-IPO phase, but subsequently recovered and even exceeded the initial price by the end of September 2016.



Graph 1: RACE:MI vs STOXX 600 Prices Evolution (2016-2020) – Source: Thomson Reuters

As presented in *Graph 1*, the major drop in the company's share price started on July 2018 when Louis Camilleri was named Ferrari's CEO after Sergio Marchionne exited due to his worsening health, before passing away. In October, due to the rejection by the European Commission of the Italian government budget given its deficit increase, the uncertainties around Brexit negotiations and China-US Trade war, most stock markets around the world crashed and

Ferrari stock price continued its negative trend. Moreover, investors remained disappointed from the 2018 3Q report due to unchanged core earnings and roughly flat sales below expectations, resulting from a more conservative approach by the new management. Starting from January 2019, the company share price recovered thanks to the readjustment of the broad-based market sell-off of 2018 4Q, but most importantly due to strong earnings report. The trend was then slowed by the recent global contraction started in February 2020, due to the Covid-19 pandemic which will be discussed further on in the valuation.

Finally, it is worth mentioning that Ferrari's share price appears to follow pretty closely the dynamics that influence the broader market. On the other hand, since its IPO it constantly outperformed the STOXX 600 Index with a staggering 69.55% increase since January 2016, compared to the index decrease of -4.89% over the same period, with an average annual return of 38.15% and 4.62%, respectively.

Business Units

The company can be analyzed considering four lines of business as represented in *Figure 7*. The main segment and core business of Ferrari is *Cars and Spare Parts*, which includes revenues generated from car shipments, personalization programs, as well as sales of spare parts. As of December 31st, 2019, it accounts for 78% of total revenues generating almost 3 billion euros with 10,131 cars delivered. In recent years, the company has widened its product portfolio to target a larger customer base, offering highly differentiated product line-up to meet varying needs of new customer segments. At the same time, Ferrari still pursues a low volume production strategy, in order to maintain a reputation for exclusivity and scarcity among purchasers. With waiting times of up to two years for the delivery of a car, the company tries to maintain supply below demand.

Among other things, the company is also actively engaged in after sales activities, driven by the objective of preserving and extending the market value of the cars sold. Ferrari's value preservation significantly exceeds that of any other brand in the luxury car segment, which appears essential given the importance customers assign to the expected resale value.

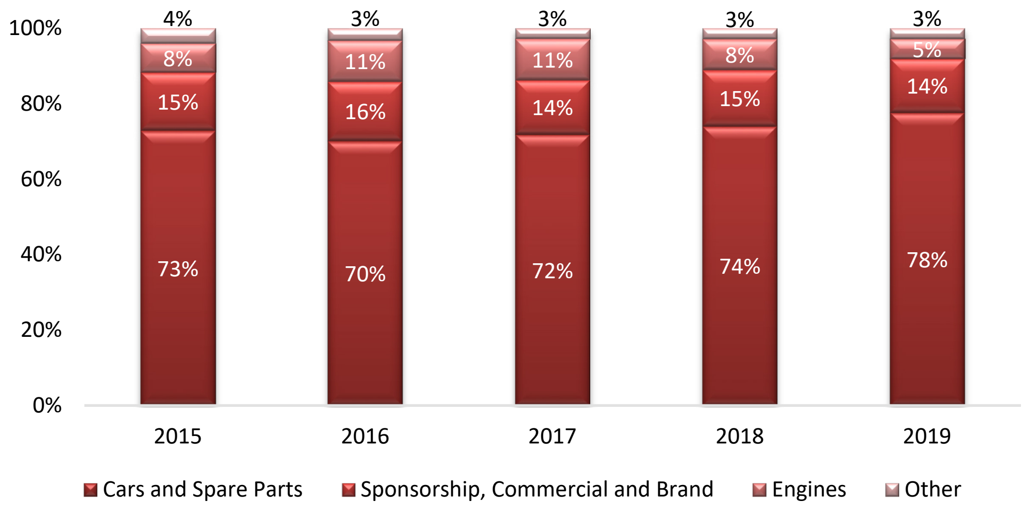


Figure 7: Revenue Generating Segments as Percentage of Total Revenue (2015-2019) – Source: Ferrari 2019a

The Formula 1 racing team is an essential part of its brand image, the main channel for Ferrari's marketing activities and an important source of technological innovation. More generally, it allows Ferrari to promote and market its brand without resorting to traditional advertising activities, therefore preserving the aura of exclusivity. The second business line for revenue generation is identified by *Sponsorship, Commercial & Brand* accounting for 14% of revenues. It includes proceeds earned by the Formula 1 racing team through sponsorship agreements and the company share of the Formula 1 World Championship commercial revenues, as well as those generated through its brand, including merchandising, licensing and royalty income.

The *Engines* segment generated 5% of Ferrari's revenue in 2019. It includes proceeds from the sale of engines to Maserati and rental to other Formula 1 racing teams. Ferrari has been manufacturing engines for Maserati since 2003. On 2019, it sold approximately 1,000 V8 turbo engines and 800 V8 aspirated engines to Maserati according to a multi-year arrangement up to 2020.

Other revenues count for 3% of total revenues and they are primarily related to financial services activities and management of the Mugello racetrack, one of the world's finest circuit of its type and the only to have received the "Best Grand Prix" award five times. This circuit is primarily used by event organizers, who regularly rent the circuit to host leading car and motorbike races, including the MotoGP World Championship since 1992, and for testing and developing purposes.

Brand

According to Brand Finance, the world's leading independent brand valuation consultancy, Ferrari retains pole position as the world strongest brand with a Brand Strength Index (BSI) score of 94.1 out of 100 and elite AAA+ rating. It determines the relative strength of brands through a balanced scorecard of metrics evaluating marketing investment, stakeholder equity, and business performance. According to these criteria, Ferrari is the strongest of only 12 brands in the *Brand Finance Global 500 2020* ranking to have been awarded the highest AAA+ rating, as shown in *Appendix 7*, which presents the top 10 strongest brands.

Simultaneously, the value of its brand grew, improving 9% to $9.1 billion. The company also established a manufacturing agreement with Giorgio Armani Group to help push Ferrari collections into a more premium space. The prestige, identity, and appeal of the Ferrari brand strongly depend on the performance of the Scuderia Ferrari racing team in the Formula 1 World Championship, which in turn relies on the company's ability to attract and retain top drivers, racing management and engineering talent. It can be perceived as a demonstration of the technological capabilities that the company is able to put at service for its road cars. Moreover, the aura of exclusivity and the sense of luxury which Ferrari's brand conveys appears a key differentiator to maintain its reputation and exclusivity among buyers.

Geographic Operation

Ferrari is the market leader in several countries, including France, Italy, China, Japan and South Korea, among others. The geographical breakdown of revenues testifies Ferrari's focus in Europe, accounting for 53% of revenues, followed by the Americas at 27% and APAC countries at 20% (*Figure 8*).

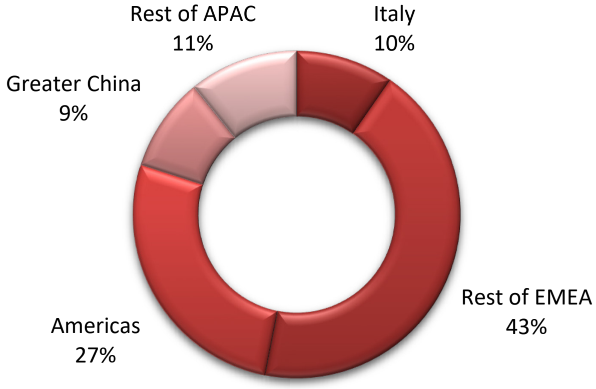


Figure 8: Revenues Breakdown by Geographies 2019 – Source: Ferrari 2019a

The number of the company's dealers as well as their geographical distribution tends to closely reflect the development of sales volumes to end clients in its markets. Due to the lack of detailed revenues breakdown by geography, the geographic breakdown of units shipped is presented in the following figure, considered as a significant measure given that almost 80% of Ferrari's revenue is generated through this segment.

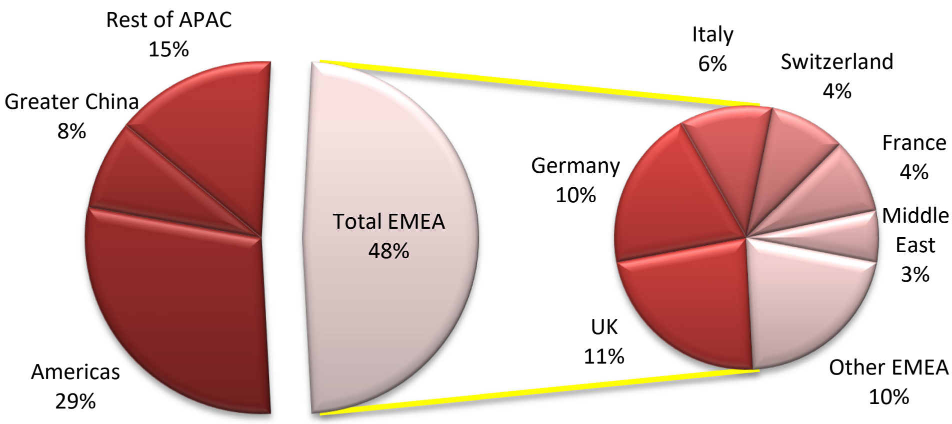


Figure 9: Car Shipments by Geographies – Source: Ferrari 2019a

Still, Ferrari's primary geographical markets are represented by Europe and the Americas, with combined revenue generation of 77%, 48% and 29% respectively. Next in the ranking, Rest of APAC with a share of 15% and Greater China, with 8%. Within Europe, Germany and UK are the two largest markets for Ferrari, with 10% and 11% respectively, followed by Italy with 6% of cars sold. For an historic breakdown of shipments by geography see *Appendix 8*.

Challenges & Opportunities

Ferrari has an enormous opportunity to expand its market share in Asian markets. Even though the Chinese market represents its highest market share, there is still room for improvement given the company is relatively under-penetrated versus its peers in the area. As shown in the *World Wealth Report 2018*, Asia-Pacific has overtaken North America in number of HNWI. Furthermore, the development in consumer preferences in Asian markets, where newly affluent are increasingly embracing western luxury brands, is leading to higher demand for cars in the segment.

The biggest challenge Ferrari is facing is the trade-off between its growth strategy to meet the increasing demand and its low volume production approach. On one hand, at Ferrari's Capital Markets Day in September 2018, the plan was announced to introduce an unprecedented 15 new models between 2019 and 2022. On the other hand, the company's focus on maintaining exclusivity poses some limits to its potential sales growth. In 2019, more than 10,000 cars were sold which represents a triggering point, since it is identified as the threshold that, once exceeded, identifies a company as no longer being considered a small volume manufacturer (SVM). Despite global shipments exceeding 10,000, Ferrari still qualifies as SVM under EU regulations, since the number applies to registered vehicles in the EU. The same does not apply in the United States, where starting from 2019, the company is no longer considered to be an SVM by the National Highway Traffic Safety Administration (NHTSA), and therefore it may be required to purchase further fuel economy ("CAFÉ") credits.

Other significant limitations and opportunities reside in hybrid and electric technology. This will be key to providing continuing performance upgrades to its sports car customers while helping to meet increasingly stricter emissions requirements. In 2019, Ferrari implemented the first series production to feature hybrid technologies with the SF90 Stradale, which is expected to be included in 60% of its product portfolio by 2022.

Finally, a separate discussion should be referred to the Covid-19 situation. Acknowledged as an unprecedented circumstance, it is extremely difficult to know what will happen. However, recognizing its worldwide impact, it is going to be included in the valuation. For further information about the company's challenges and opportunities see *Appendix 9*, which shows Ferrari's SWOT analysis.

Financial Analysis

In this section, the financial analysis on Ferrari is presented. The objective is to analyze in detail the company's historical performance in order to explore the viability, stability, and profitability of the business. This process is carried out through the observation of the evolution of key performance indicators.

Revenues

An analysis of revenues segmented by business units is presented in the following figure. Since the IPO, the company's revenues registered a CAGR of 7.2%.

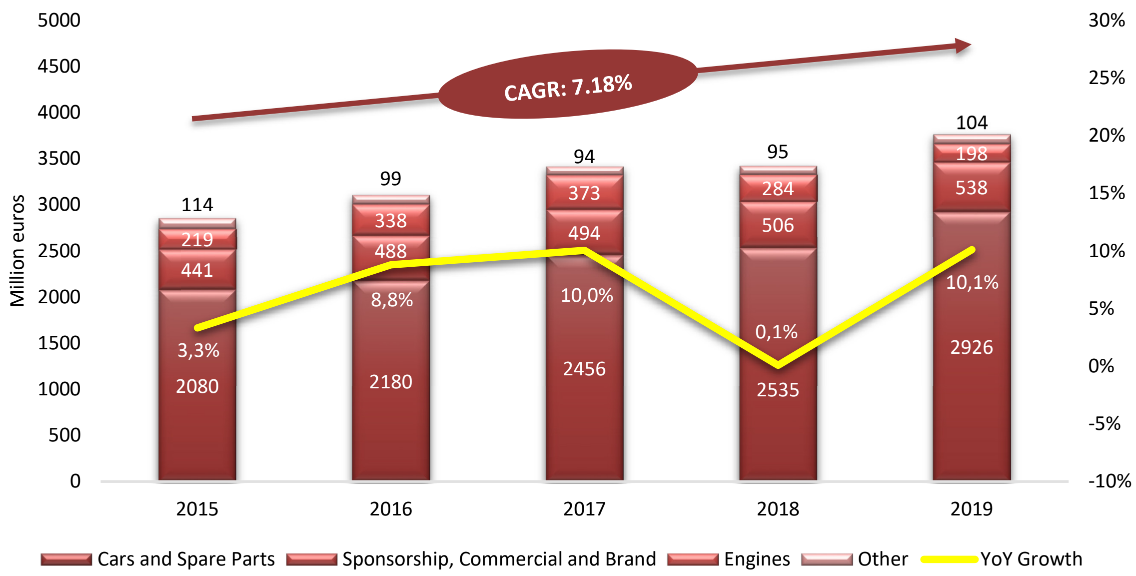


Figure 10: Revenues generated by Business Unit Evolution (2015-2019)– Source: Ferrari 2019a

Cars & Spare Parts segment contributed the most to the increase in revenues, presenting a CAGR of 8.91% throughout 2015-2019 with a stunning increase of 12.7% and 15.4% in 2017 and 2019, respectively. This development was primarily attributable to positive volume impact, greater contribution from its personalization programs and pricing increases on certain models, across all major geographical regions.

As previously discussed, the *Sponsorship, Commercial & Brand* segment heavily relies on the performance of the Formula 1 Racing Team whose ranking consistently tracks the change in revenues of this segment. However, the recent performance has not lived up to expectations, with the last championship won in 2008. Analyzing the performance of this segment on a standalone basis, it registered a CAGR of 5.1% between 2015 and 2019 growing at a low but constant level.

Concerning the *Engines* business unit, even though a multi-year arrangement regulates the relationship in which Maserati is required to compensate the company for certain costs, such as a shortfall in the annual volume of engines actually purchased, the division recorded a negative CAGR of -2.49%. The decrease was mainly attributable to a declining number of engines shipped, especially in the last two years.

Finally, in the time period analyzed, *Other revenues* remained pretty stable with a CAGR of -2.27%, primarily driven by the deconsolidation of the financial services business in Europe since November 2016 following the sale of a majority stake in FFS GmbH to FCA Bank.

Profitability Indicators

Throughout the time span analyzed, as shown in *Figure 11*, Ferrari's key performance indicator registered a consistent increase. Overall, the upward trend is low but constant, except for Net Income and ROIC in the last year, which slightly decreased.

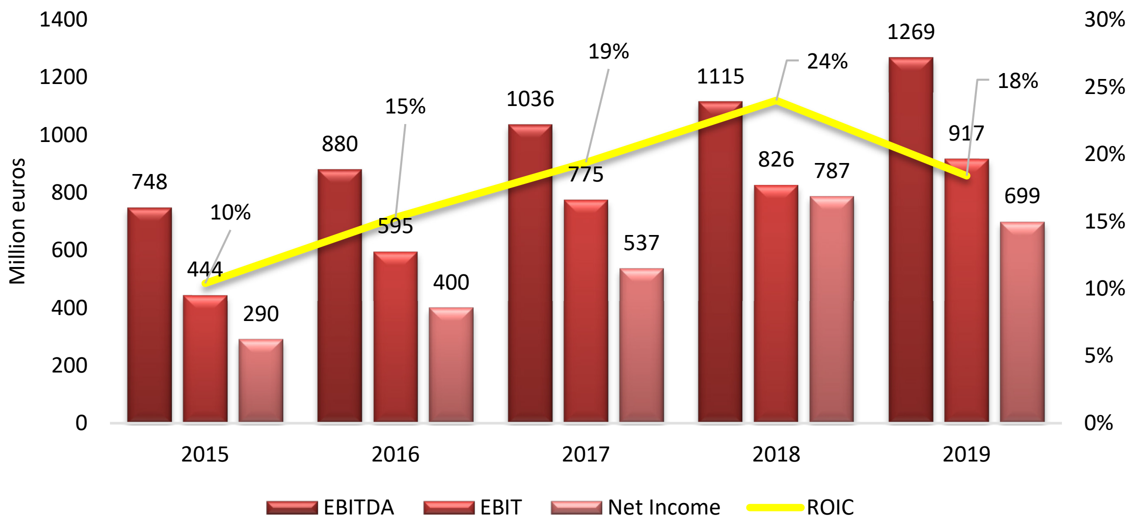


Figure 11: EBITDA, EBIT, Net Income & ROIC Analysis (2015-2019) – Source: Ferrari 2019a & Thomson Reuters

This positive tendency is primarily attributable to the combined effects of different contributors. Specifically, the positive volume impact played a key role, but also the positive product mix and price impact should be considered. Furthermore, cost of sales experienced a constant decrease reaching a stable level settled around approximately 51% of related revenues, from 58% in 2015.

In the last year, in contrast with the evolution of other indicators, Net Income decreased by 11%. This can be explained by the application of the Patent Box tax regimes, whose benefits were recorded within taxes relating to prior periods (2015-2017) in 2018 and amounted to 141 million euros. Hence, this benefit significantly increased Net Income in 2018 giving the impression of a subsequent decrease in the following year. The same applies to the decrease of ROIC which results impacted by the decrease in Net Income.

Focusing on Ferrari's operating margins, as shown in *Figure 12*, it is possible to better understand the company's increasing profitability, due to the same aforementioned reasons.

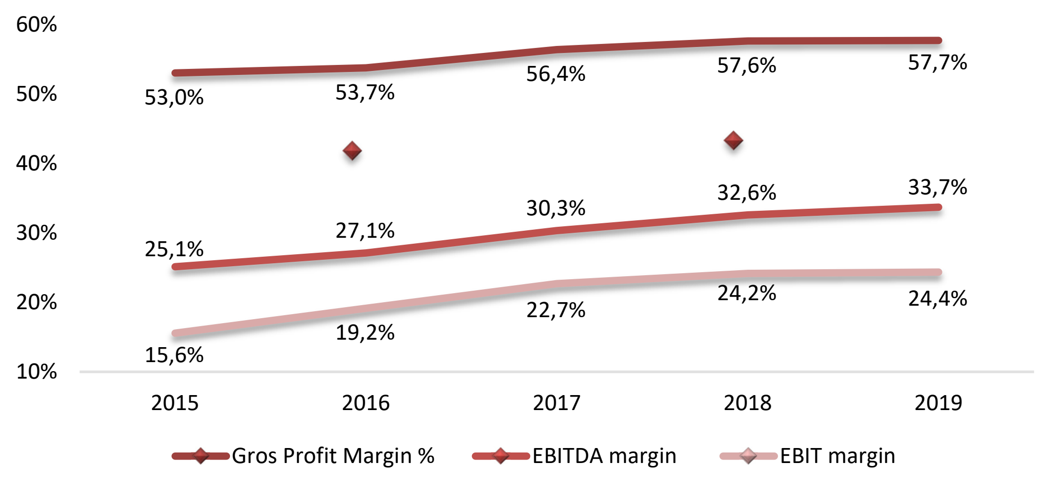


Figure 12: Ferrari's Profitability Margins (2015-2019) – Source: Ferrari 2019a

Starting in 2015, Ferrari has been able to constantly increase its profitability across all major indicators, which also shows a stabilization in the last two years.

Research & Development and Capital Expenditures

Every year Ferrari allocates a significant proportion of capital to fund R&D and CAPEX to support the continuous product range renewal, enhance manufacturing efficiency and improve capacity, as well as for maintenance and environmental compliance. These expenses are highly influenced by the timing and the number of new models launched, as well as Formula 1 activities, which require the design and production of a new racing car every year. Fortunately, the company benefits from these investments, transferring technologies and know-how initially developed for racing to its road cars.

As presented in *Appendix 10*, R&D expenses appear pretty consistent between 2015 and 2019, due to the continuous product range renewal, that places between two and four new models on the market every year. Since 2011, considerable resources have been deployed for the transition of Ferrari's product portfolio to hybrid and electric technology. Furthermore, these high levels of expenses are facilitated by certain tax breaks recognized by Italian tax regulations, for R&D expenses and the investments on manufacturing equipment, which result in tax savings.

On the other hand, Gross CAPEX almost doubled between 2015 and 2019, as shown in *Figure 13*. In particular, PP&E and Capitalized R&D registered a significant growth. The explanation concerning the former, resides in Ferrari's expansion plan in its principal manufacturing facility in Italy, which added the new Ferrari Design Centre in 2018 and the New Technical Center for the development of engines and hybrid systems, the following year.

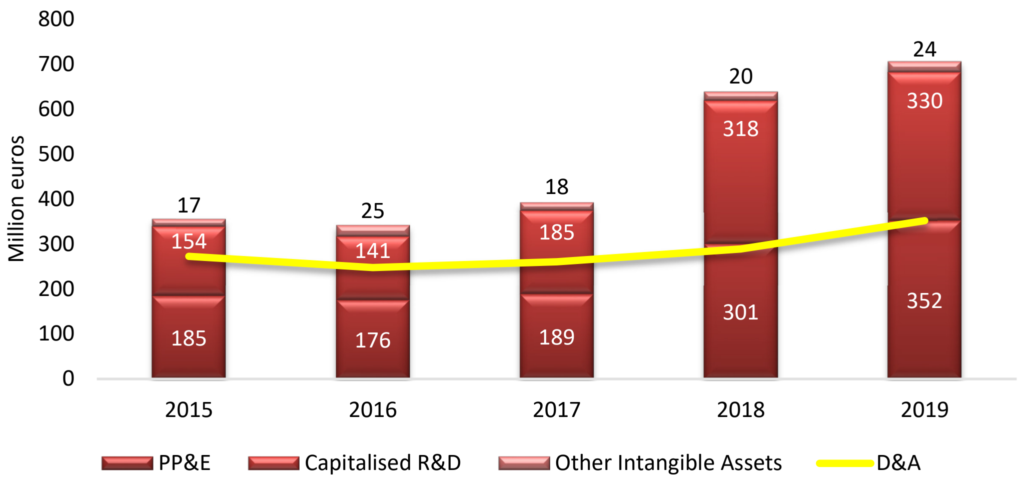


Figure 13: Gross CAPEX Analysis (2015-2019) – Source: Ferrari 2019a

Moreover, the recent increase reflects the purchase of land, to be used for further developments, and substantial additions to PP&E, mainly related to machinery for new models. As already anticipated, the explanation of a high portion of Capitalized R&D resides in the huge benefits of hybrid and electric powertrains developments, which are being transferred to its road cars. These primarily include materials and personnel costs relating to engineering, design and development activities focused on content enhancement of existing cars and new models. In general, capitalization ceases and amortization of capitalized development costs begins on start of production of the relevant project.

Working Capital Requirements

Ferrari's working capital requirements appear subject to fluctuations mainly due to the deconsolidation in 2016 of Ferrari Financial Services GmbH ("FFS GmbH") and the application of the Patent Box tax regime. Due to the lack of information provided to value FFS GmbH as a standalone financial business and the consideration that it supports sales activities offering financing solutions to Ferrari customers, it was included in the working capital. *Table 1* presents the summary of historical working capital, analyzed by its components.

	2015A	2016A	2017A	2018A	2019A
Operating Current Assets					
Trade Receivables	*158*	*244*	*239*	*211*	*231*
Receivables from Financing Activities	*1174*	*790*	*733*	*878*	*966*
Current Tax Receivables	*15*	*1*	*6*	*128*	*21*
Accounts Receivable	1347	1036	978	1218	1219
Total Inventory	295	324	394	391	420
Deferred Tax Assets	123	119	94	61	74
Other Current Assets	46	54	45	64	93
Total Current Assets	**1812**	**1533**	**1512**	**1734**	**1806**
Operating Current Liabilities					
Accounts Payable	508	615	608	654	712
Accrued Expenses	94	98	116	107	114
Customer Advances	442	503	442	417	624
Income Taxes Payable	125	42	29	8	7
Deferred Tax Liabilities	23	13	11	39	82
Other Payables	40	19	21	18	20
Total Current Liabilities	**1232**	**1289**	**1225**	**1243**	**1560**
Working Capital	**580**	**243**	**287**	**492**	**246**
Net Change in WC		**337**	**-43**	**-205**	**246**

Table 1: Working Capital Requirements Subdivision Analysis (2015-2019) – Source: Ferrari 2019a

Furthermore, analyzing the time it takes to convert its investments in inventory and other resources into cash flows from sales, Ferrari was able to improve its Cash Conversion Cycle (CCC), as presented in Appendix 11. This is primarily attributable to the decrease in Days Sales Outstanding (DSO) from 172 in 2015 to 118 in 2019, due to the aforementioned deconsolidation, and the increase in Days Payable Outstanding (DPO) from 137 days to 163. On the other hand, Days Sales Inventory (DSI) slightly increased to cope with the increase of units produced. This demonstrates the company's ability to exploit the CCC generating cash in a faster way than from selling its product, while at the same time having more time to pay its suppliers.

Debt Structure

Debt and Net Debt, together with Net Industrial Debt, represent the primary measures used to analyze Ferrari capital structure and financial leverage and to compare it with other competitors, as shown in *Figure 14* below.

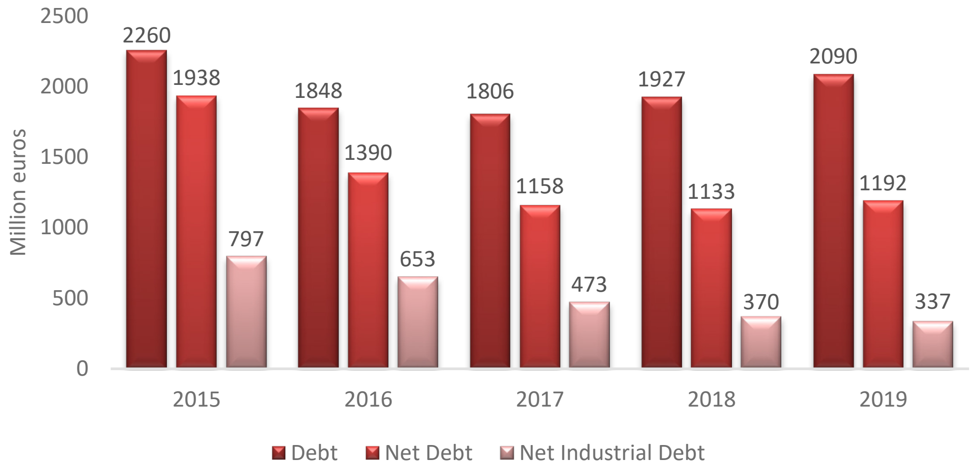


Figure 14: Debt Structure Analysis (2015-2019) – Source: Ferrari 2019a

Ferrari's portion of debt decreased since its IPO reaching a stable structure, a testament of the company's will to reduce its burden, with only a recent increase motivated by higher investments for the transition to hybrid technology. Net debt followed a similar pattern, without a recent increase showing Ferrari's increasing portion of liquidity, despite the increase in Debt. This gives Ferrari the ability to cope with sudden and unexpected changes that otherwise would have limited its ability to raise further capital or incur additional indebtedness. Moreover, Net industrial Debt, serving as a more operational proxy, shows a drastic and constant decrease, which can be translated as an improvement in industrial free cash flows, among other things.

Finally, as testified by Ferrari's Debt-to-Equity ratio evolution, presented in *Appendix 12*, the company seems to have reached a stable capital structure in recent times, following the repayment of its debt obligations incurred in the IPO.

Company Valuation

The valuation of Ferrari is performed as of April 30th, 2020. In line with that, all relevant data and assumption are based on information available until this point in time. The financial year is considered to follow the normal calendar year (January 1st-December 31$^{st)}$. Considering the data cut-off period ending in 2020, the forecasting period spans between 2020 and 2024. At the end of this period, the company is considered to reach a steady state since it will have dealt with the US-fuel economy restrictions and transformed its product-line to include hybrid and electric technologies, that will also mitigate the application regarding emission requirements. Moreover, Ferrari's core business and revenue driver, identified by number of units sold, presents a stabilization starting in 2023 as well as growth rates and operating margins.

In order to value Ferrari's business, a DCF valuation was performed and used as the primary valuation model, but with the aim to support and probe the assumptions made, a relative valuation was incorporated. Finally, the target price is the combination of the aforementioned valuation approaches. Firstly, the assumptions made about Ferrari future prospects are presented, which are summarized in the restated financial statements forecast presented in *Appendix 13* and *14.* Afterwards, the prices reached with both models are presented and blended, reaching the final target price.

Forecasts & Assumptions

Revenues

Pursuing a low volume production strategy and managing actively its delivery waiting lists, it is relatively simple and smooth to forecast revenues in a reliable manner, whose stream appears regulated by management rather than demand.

According to Ferrari's Annual Report 2019, its current growth strategy contemplates a measured but significant increase in car sales above current levels as the company targets a larger customer base and modes of use. The restrictions of 10,000 cars does not seem to carry significant implications, considering they actually apply to units registered, and the company is expected to mitigate the same risk by including hybrid and electronic technology, which will represent a significant stake of its models by 2022. The main aspect that limits the company increasing production is identified by its effort in balancing exclusivity. Thus, the number of units sold is expected to follow the growth of HNWI, which is expected to show a CAGR around 5.3% throughout 2025.

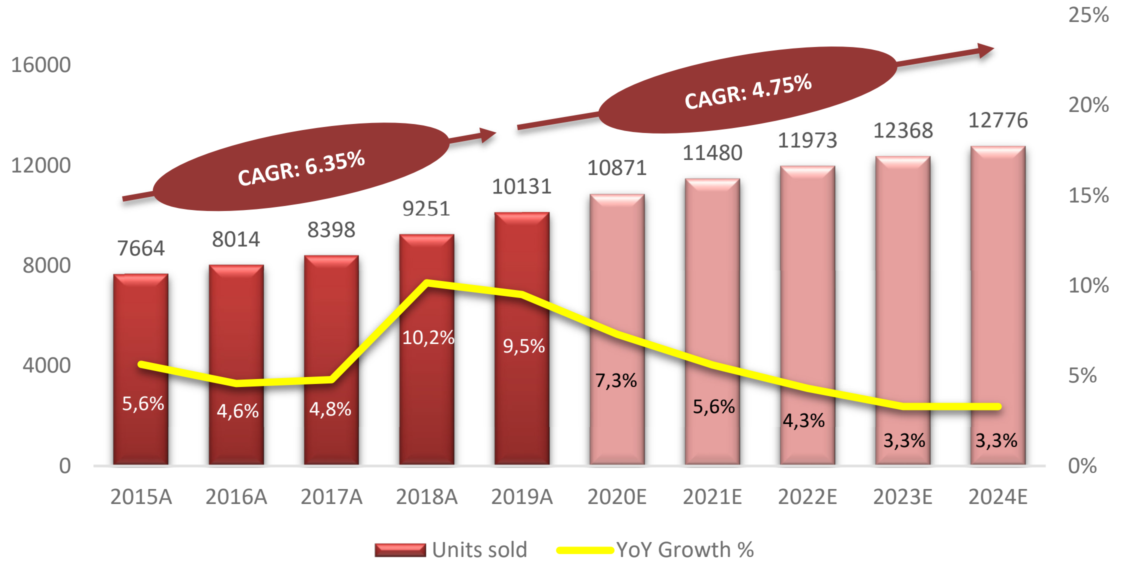


Figure 15: Units Sold Development (2015A-2024E)

Ferrari is expected to grow at a slightly lower rate, represented by a CAGR of 4.75%, reaching a production around 12,000 units in 2022, and growing at a slower pace afterwards in order to balance the supply and demand forces. Moreover, the other components, in order to forecast revenues are identified in the new model launches and the average price.

With the extraordinary plan to introduce 15 new models between 2019 and 2022, the company strategic plan is expected to achieve a significant increase in average retail price. Adding new members to the product range, as testified by the Icona limited editions (EUR 1.5 million), SF90 Stradale (EUR 500,000), its first SUV the Purosangue (EUR 350,000) and incorporating hybrid powertrains (~ EUR 450,000) in 60% of models, the company seeks to almost double core earnings and boost margins to above 38% without sacrificing exclusivity.

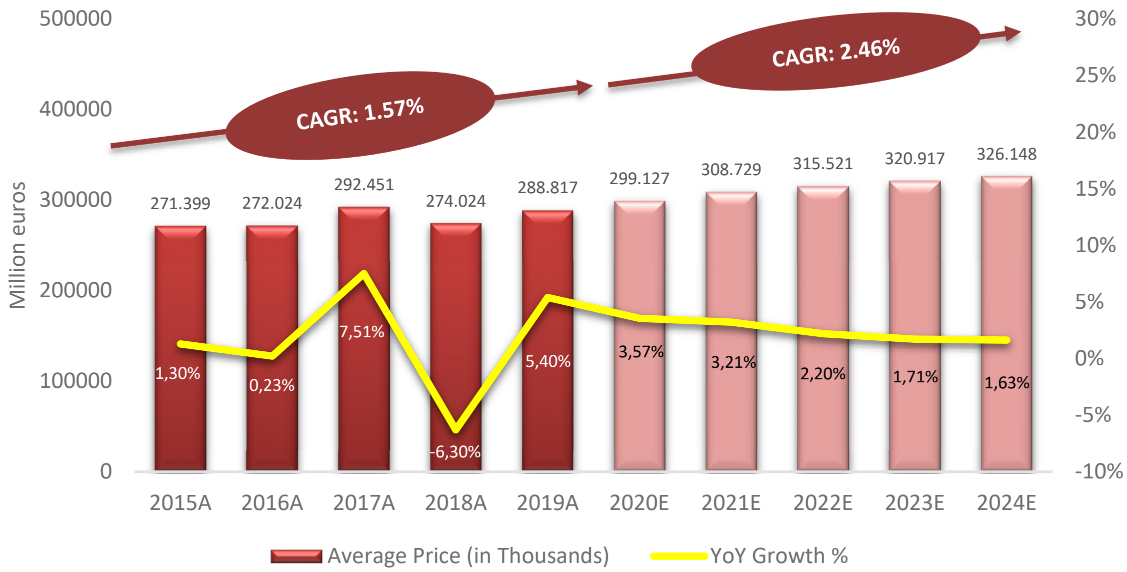


Figure 16: Average Price Development (2015A-2024E)

Thus, Ferrari average price is expected to gradually increase during the explicit period, reaching an increase of approximately 13% in 2024, as shown in *Figure 16*.

Sponsorship, Commercial & Brand segment is expected to constantly increase revenue, thanks to the brand expansion strategy. In recent years, Formula 1 audience has steadily increased, with almost 2 billion of global cumulative audience in 2019, the highest since 2012. Moreover, its social media channels confirmed their status as the fastest growing of all major sports leagues. Its brand diversification strategy will ensure long term profitable growth, relying on brand extension, a wider and younger customer base and "Car Adjacencies", a collection of exclusive luxury products and services. Having this into mind, this segment is assumed to grow at a CAGR of 4.80% close to the historic rate of 5.10%, in line with the GDP growth expectations where the company operates.

Regarding the *Engines* segment, it has been announced that the company will no longer supply engines to Maserati, starting in 2021 or 2022. Considering that the contract represents approximately two-thirds of the business unit, its revenues are expected to noticeably decrease over the following years, relying only on engines rented to other Formula 1 racing teams.

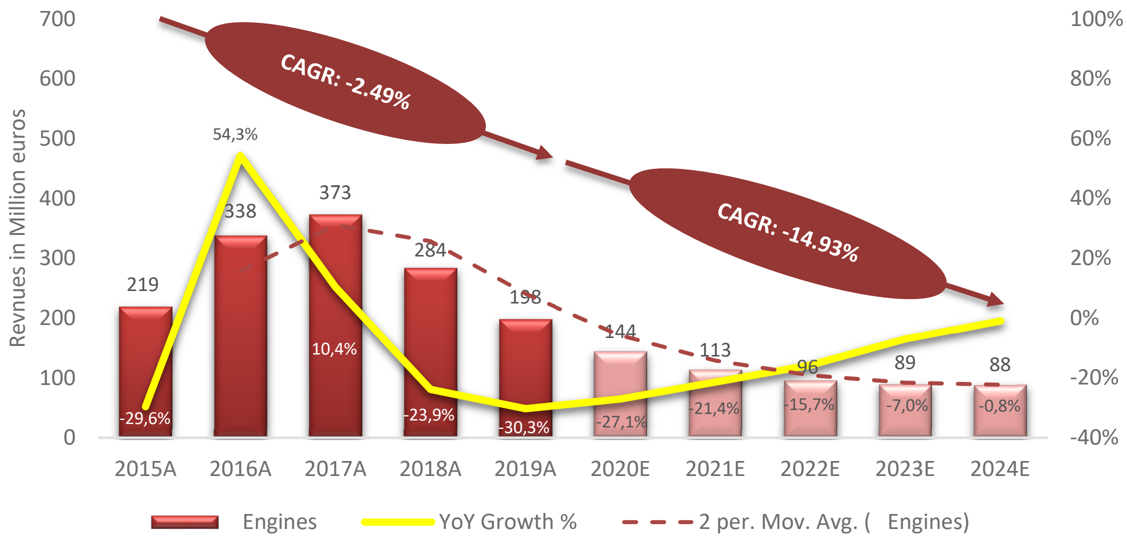


Figure 17: Engines Segment Development (2015A-2024E)

Thus, a negative CAGR of approximately -15% is considered, to account for the termination of the contract.

Finally, *Other revenues* is considered to remain stable in the following years at a CAGR of 1.83%. This growth appears to follow primarily the increasing use of the Mugello racetrack, which in 2019 registered one of the largest audiences ever recorded.

Cost of Sales

Cost of sales is composed by the expenses incurred in the manufacturing and distribution of cars and parts, as well as costs linked to the production for *Engines*. Starting from 2015, COGS experienced a constant decrease from 58% in 2015 to 51% in 2019 of related revenues, driven by lower industrial costs and production engines volumes. However, the company's increasing pricing strategy, made possible through the introduction of new models, is assumed to increase COGS accordingly. On the other hand, the higher margins together with the dismissal of the contract with Maserati are expected to offset the previous increase and make COGS slightly decrease in proportion of related revenues as presented in *Figure 18.*

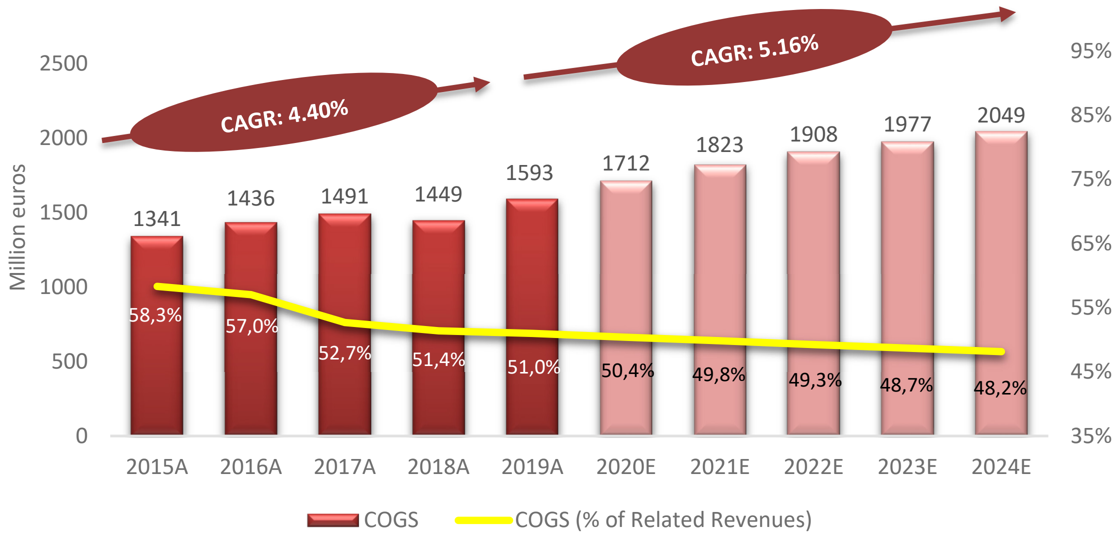


Figure 18: Cost of Sales Development (2015A-2024E)

Without considering the higher premium embodied in its cars, COGS is assumed to gradually increase throughout 2024 to 53% of *Cars & Spare Parts* revenues.

Selling, General & Administrative Costs

SG&A includes selling costs, which incorporates costs for sales personnel, marketing and events, retail stores, and general and administrative costs, consisting of administration and other general expenses not directly attributable to manufacturing, sales or R&D activities. Over the past years, SG&A as a percentage of *Sponsorship, Commercial & Brand* revenues has been stabilized around at a level of 64% between 2016 and 2019.

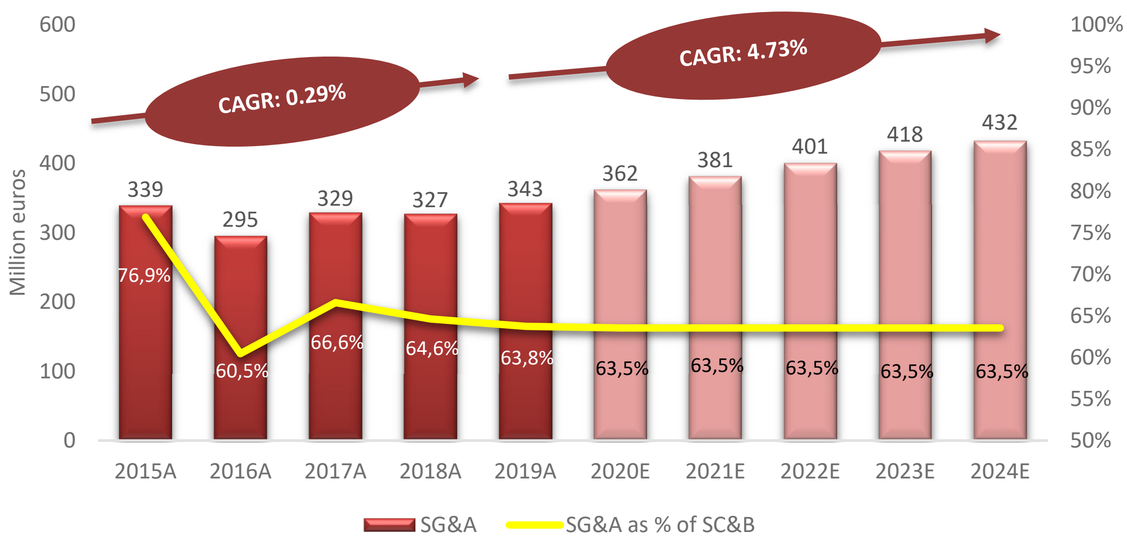


Figure 19: Selling, General & Administrative Expenses Development (2015A-2024E)

In the forecasted period, this segment is expected to slightly increase in absolute terms due to the expansion and brand diversification strategy. The gradual increase in SG&A will experience a CAGR of 4.5%, resembling the dynamics that characterize the increase in the *Sponsorship, Commercial & Brand* business unit, but also considering higher costs related to administration and other general expenses.

Research & Development Expenses

Historically, R&D expenses compared to related revenues remained between 20% and 18% but increased in absolute value. In the medium term, the company expects to increase R&D spending particularly on hybrid and electric technology-related projects.

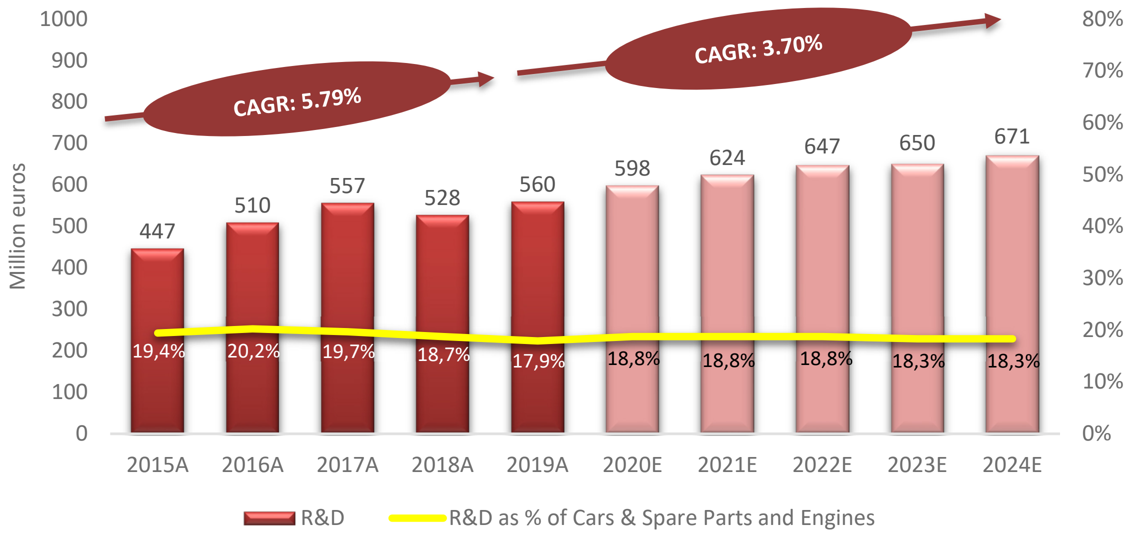


Figure 20: Research & Development Expenses Development (2015A-2024E)

Having this in mind, these expenses are expected to gradually increase and approach the historical average considering higher revenues will drive the increase in R&D expenses.

Capital Expenditures

Capital expenditures are expected to increase in the medium term, following Ferrari's expansion plan. At the same time, considering the size of Ferrari, it is unthinkable that it will be able to sustain such a pace as in the last two years, equal to 22.5% of revenues from *Cars & Spare Parts* and *Engines*. Hence, CAPEX is assumed to increase and stabilize in the following years.

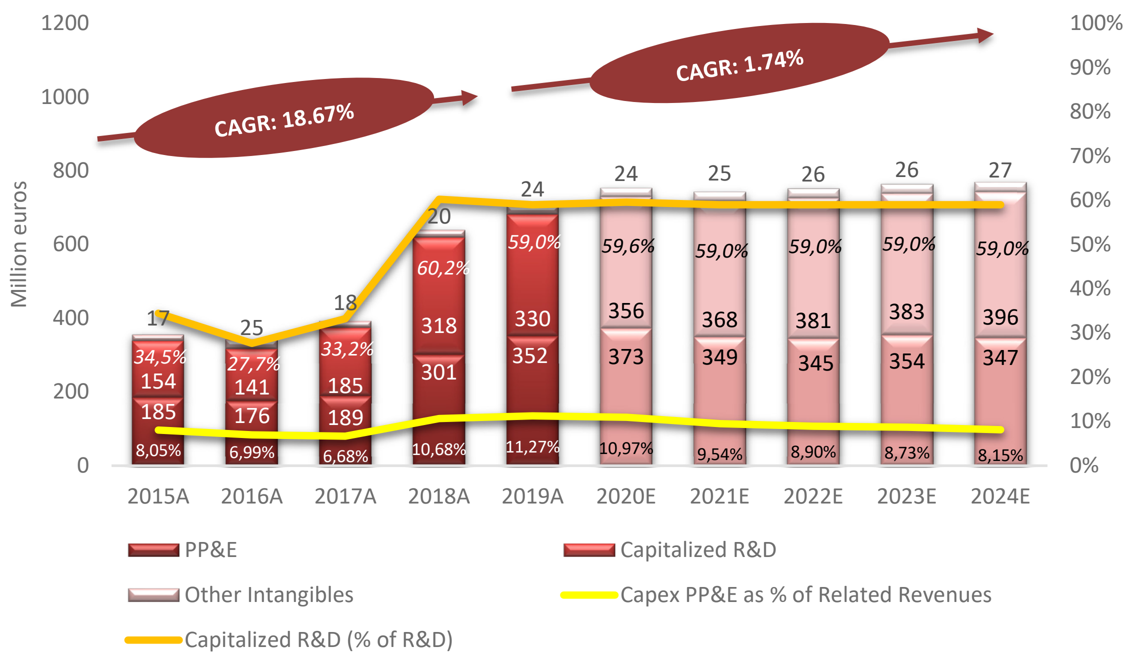


Figure 21: Capital Expenditures Development (2015A-2024E)

This is explained by the fact that during 2018 and 2019, half of these expenditures were used to fund Ferrari expansion of PP&E, mainly related to plant and machinery for new models, which will provide room for further expansion. Hence, for the explicit period this voice is expected to attain at a level closer to the historic average of 18% of related revenues, to account for an expansion of the production levels and machineries equipment, but also the capitalization of the costs related to hybrid technologies which is going to be fundamental to the development of Ferrari models in the future.

Depreciation & Amortization Costs

As shown in *Appendix 15,* where a detailed subdivision is presented, D&A costs increased in the last years, strictly linked to higher CAPEX. On the other hand, relative to the investments in PP&E and Intangible Assets, these costs decreased from 77% to 50% due to the recent expansion plan. Considering the introduction of hybrid technologies, D&A costs are expected to increase consequently, to track the natural cycle of obsolescence that PP&E and Intangible Assets will be subject to in the near future.

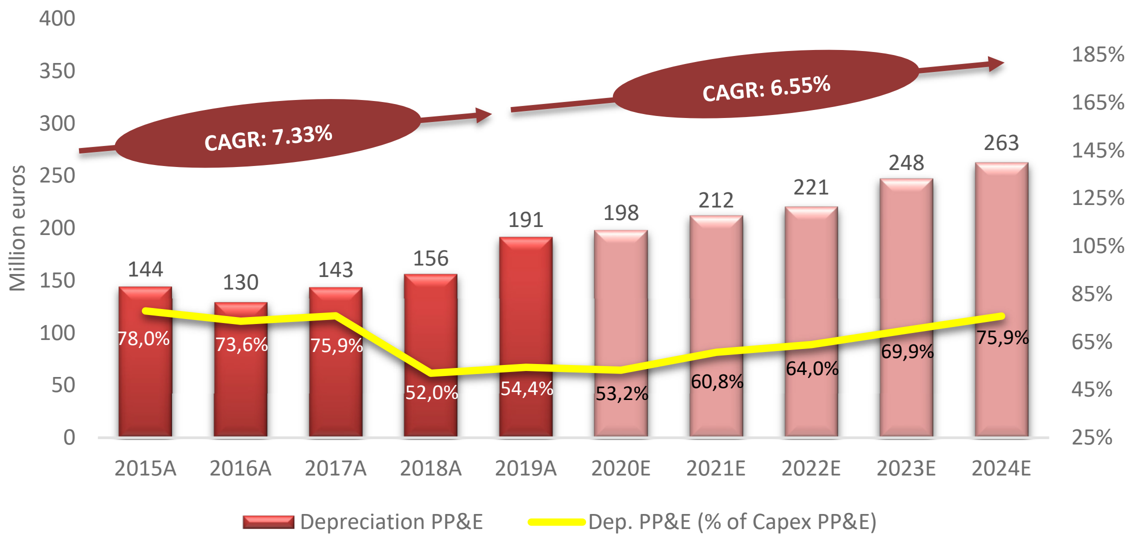


Figure 22: Depreciation of Property, Plant & Equipment Development (2015A-2024E)

Thus, D&A costs are expected to gradually increase relative to their variables reaching an average value of approximately 65% in line with historical values and 76% in 2024 approaching CAPEX. Depreciation expenses, relatively to CAPEX in PP&E are also assumed to follow the natural obsolescence of their variable.

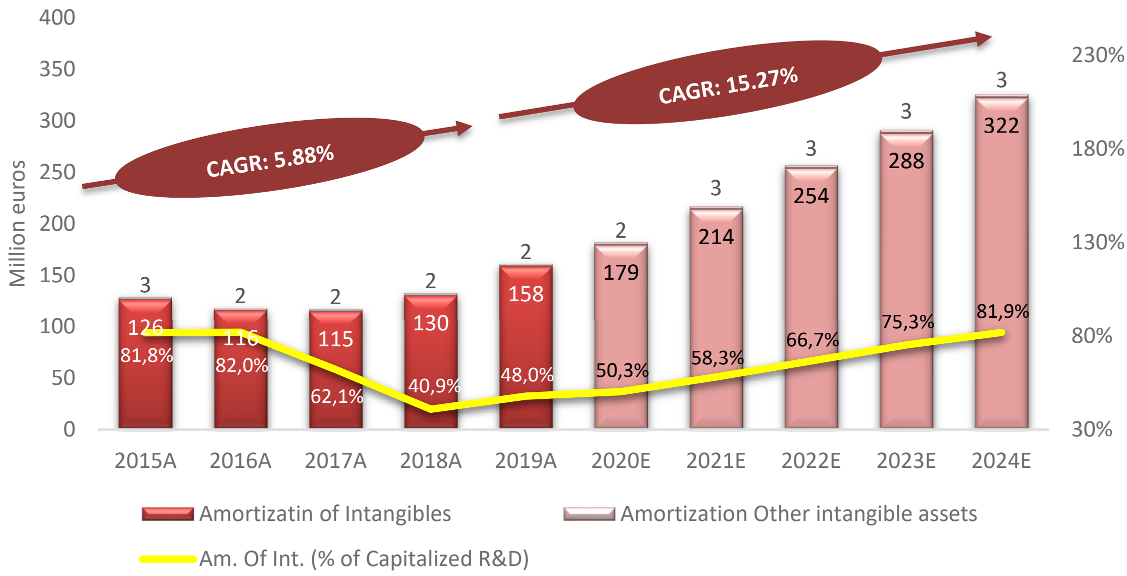


Figure 23: Amortization of Intangibles Development (2015A-2024E)

On the other hand, amortization of intangibles is expected to grow tracking the increase in capitalized development costs in prior years, which usually are amortized on a straight-line basis from the start of production over the estimated lifecycle of the model or the useful life of the components (generally between four and eight years).

EBITDA-EBIT Margins

With the projection of all major variables, Ferrari's profitability is summarized in the following figures. Within the explicit period, the company is expected to continue following the past increasing trend concerning its EBITDA-EBIT margins.

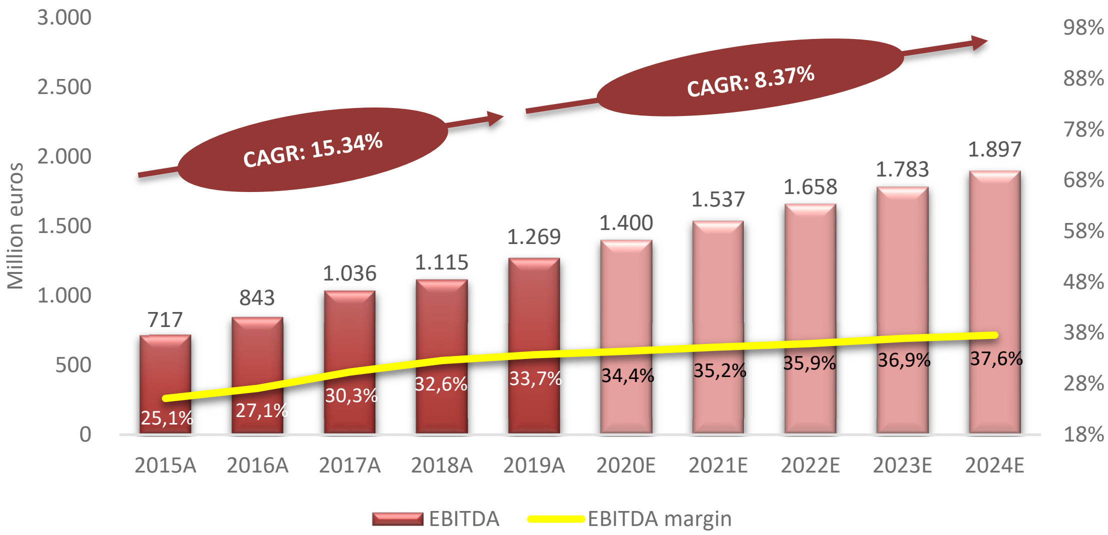


Figure 24: EBITDA & EBITDA Margin Development (2015A-2024E)

This appears attributable primarily to its pricing strategy, positive volume impact and product mix as well as cost improvements. EBITDA is assumed to reach almost 2 billion in 2024 with a 37.6% EBITDA margin, a CAGR of 8.37%.

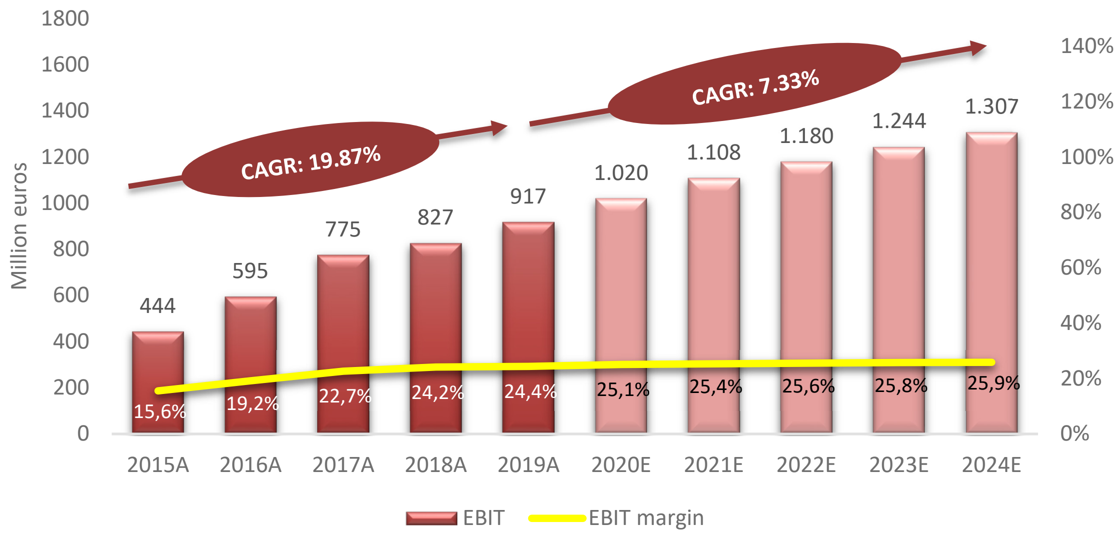


Figure 25: EBIT & EBIT Margin Development (2015A-2024E)

At the same time, a lower increase is related to its EBIT with a 7.3% CAGR and an EBIT margin around 26%, which serving as a more operational proxy appears to have stabilized thus reaching an operational steady state.

Net Working Capital

In order to forecast Ferrari's Working Capital requirements in a reliable manner, every component was considered and projected separately, as shown below.

(million euros)	2015A	2016A	2017A	2018A	2019A	2020E	2021E	2022E	2023E	2024E
Operating Current Assets										
Trade Receivables	*158*	*244*	*239*	*211*	*231*	*254*	*281*	*303*	*317*	*331*
Receivables from Financing Activities	*1174*	*790*	*733*	*878*	*966*	*996*	*1100*	*1187*	*1240*	*1295*
Current Tax Receivables	*15*	*1*	*6*	*128*	*21*	*21*	*23*	*25*	*26*	*28*
Accounts Receivable	1347	1036	978	1218	1219	1272	1404	1515	1583	1653
Total Inventory	295	324	394	391	420	455	483	522	540	558
Deferred Tax Assets	123	119	94	61	74	72	80	86	90	94
Other Current Assets	46	54	45	64	93	70	77	83	87	90
Total Current Assets	**1812**	**1533**	**1512**	**1734**	**1806**	**1868**	**2044**	**2206**	**2300**	**2395**
Operating Current Liabilities										
Accounts Payable	508	615	608	654	712	761	809	856	885	916
Accrued Expenses	94	98	116	107	114	122	130	137	142	147
Customer Advances	442	503	442	417	624	611	675	728	761	794
Income Taxes Payable	125	42	29	8	7	17	18	19	20	20
Deferred Tax Liabilities	23	13	11	39	82	82	83	89	93	98
Other Payables	40	19	21	18	20	22	23	25	26	26
Total Current Liabilities	**1232**	**1289**	**1225**	**1243**	**1560**	**1615**	**1738**	**1855**	**1927**	**2001**
Working Capital	**580**	**243**	**287**	**492**	**246**	**253**	**307**	**352**	**373**	**394**
Net Change in WC		**337**	**-43**	**-205**	**246**	**-7**	**-53**	**-45**	**-21**	**-21**

Table 2: Working Capital Requirements Analysis & Forecasts (2015A-2024E)

Inventories forecast is based upon DSI, which are expected to slightly increase, in line with the increase in units sold, at a CAGR of 4.2% to account for the company expansion plan. Regarding accounts receivables and payables, it seems the company was able to stabilize the conditions about these voices, thus the same are applied, through the use of DSO and DPO.

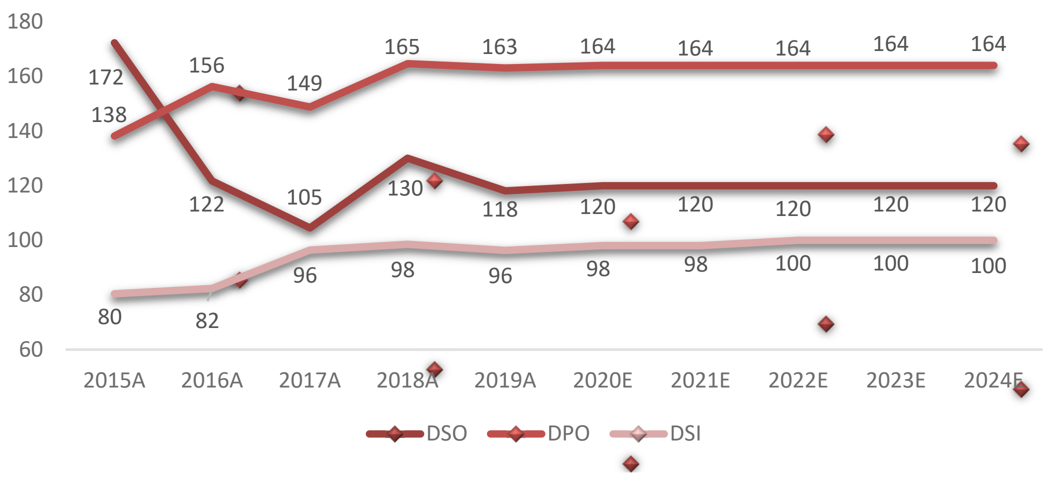


Figure 26: Cash Conversion Cycle Main Contributors (2015A-2024E)

However, trade receivables are expected to slightly increase in line with sales at a CAGR of 5.5% while receivables from financing activities are expected to stabilize, reflecting the company's deliberate geographical rebalancing. Finally, current tax receivables are expected to follow the increase in R&D expenses, due to the applicability of the Patent Box tax regime, while deferred tax assets are assumed to slightly increase following higher deferred income and higher inventory obsolescence.

The liability side is expected to increase mainly driven by customer advances, which accounts for 80% of current liabilities. They are assumed to show a CAGR of 6.6%, in line with *Cars and Spare Parts* growth, to reflect the increasing pricing strategy, considering that high-premium models require larger customer advances. Accounts payable are assumed to follow the historic average of DPO, given Ferrari's strength relative to its suppliers. Concerning deferred taxes liabilities, due to a reasoned growth in capitalization of development costs, the voice is assumed to increase accordingly. Finally, the remaining voices, such as accrued expenses, income tax payable and other payables, have been stable historically, thus the same level relative to COGS is applied. See *Appendix 16* for the detailed metrics used to forecast WC requirements.

Taxes

Ferrari is subject to various taxes in different jurisdictions. In order to obtain a reliable tax rate to include in the valuation, the effective tax rate was extracted between 2015 and 2019. It declined from 32% to 19% due to significant changes, such as a reduction in the corporate income tax rate in Italy from 27.5% to 24% and the Tax Cuts and Jobs Act in the U.S., which also decreased from 35% to 21%. However, the major impact was caused by the application of the Patent Box tax regime, which provides a tax benefit for companies that generate income through the use, both direct and indirect, of copyrights, patents, trademarks, designs and know-how. This made it possible to include 141 million euros of Patent Box benefits related to the years 2015-2017 and 61 million estimated in 2018. In light of the above information, a tax rate of 20% was selected for the purposes of the valuation, considering the same benefits are likely to apply in the years to come, even though different rates were applied in the DCF scenario analysis.

Covid-19 Adjustments

Considering the information available on April 30th, the recent evolution of the Covid-19 pandemic makes Ferrari susceptible to related risks. The ultimate severity of the crisis is uncertain at this time, but it is possible to forecast some major impacts in the company's end markets, supply chain and operations. As shown in *Appendix 17*, a "Covid-19 Scenario Analysis" was performed which summarizes the main assumptions concerning alternative scenarios. The worst-case scenario foresees a prolonged effect on operations until 2022. The production is not expected to ramp up in the short period, costs are assumed to increase due to necessary precautions and *Sponsorship, Commercial & Brand* segment is expected to be the hardest hit. Revenues are supposed to contract 8.43% compared to previous projections in 2020, 5.23% in 2021 and 2.01% in 2022 with an EBITDA decrease of 16.09%, 8.82% and 2.90% respectively in the same years. At the opposite side, the best-case scenario contemplates a rapid rebound of operations. However, most likely, Ferrari is assumed to face the base-case scenario. Relying on UHNWI, with a strong and loyal client base and actively managing the supply and demand forces and its waiting lists, Ferrari does not appear to face a significant decrease in units sold. On the other hand, following seven weeks of suspension, production is expected to ramp up from May 4th with some restrictions to cope with the circumstances. The major impact is probably going to affect the *Sponsorship, Commercial & Brand* segment, with lower royalties, reduced in-store traffic, lower museum and theme parks visitors, and Formula 1 activities with a reduced racing calendar and expected commercial and sponsorship revenues. COGS and SG&A are assumed to decrease accordingly to their variable but at a lower rate, due to increasing costs necessary to secure the recovery of production and the inalienability of some expenses. Concerning R&D and CAPEX, the company is assumed to slightly reduce these expenses primarily due to the prioritization of the production recovery and lower revenues. Finally, long-term inventories are expected to increase due to a conscious decision to be able to cope with future unexpected events.

Covid-19 Adjustments (million)	**2020E**	**Adjustment %**	**2021E**	**Adjustment %**
Cars and Spare Parts Revenues	-119,65	-3,68%	-61,75	-1,74%
Sponsorship, Commercial & Brand	-83,85	-14,72%	-23,99	-4,00%
COGS	-18,09	-1,06%	-18,46	-1,02%
Gross Profit	**-185,41**	**-7,86%**	**-67,27**	**-2,65%**
SG&A	-31,96	-8,83%	-12,19	-3,20%
R&D	-17,97	-3,01%	-3,48	-0,56%
EBITDA	**-135,48**	**-9,68%**	**-51,60**	**-3,36%**
D&A	-7,69	-2,02%	-1,91	-0,45%
EBIT	**-127,78**	**-12,53%**	**-49,69**	**-4,49%**
PP&E	*-4,33*	*-1,16%*	*-1,18*	*-0,34%*
Capitalized R&D	*-10,71*	*-3,01%*	*-2,05*	*-0,56%*
Capex	-15,04	-2,00%	-3,23	-0,44%

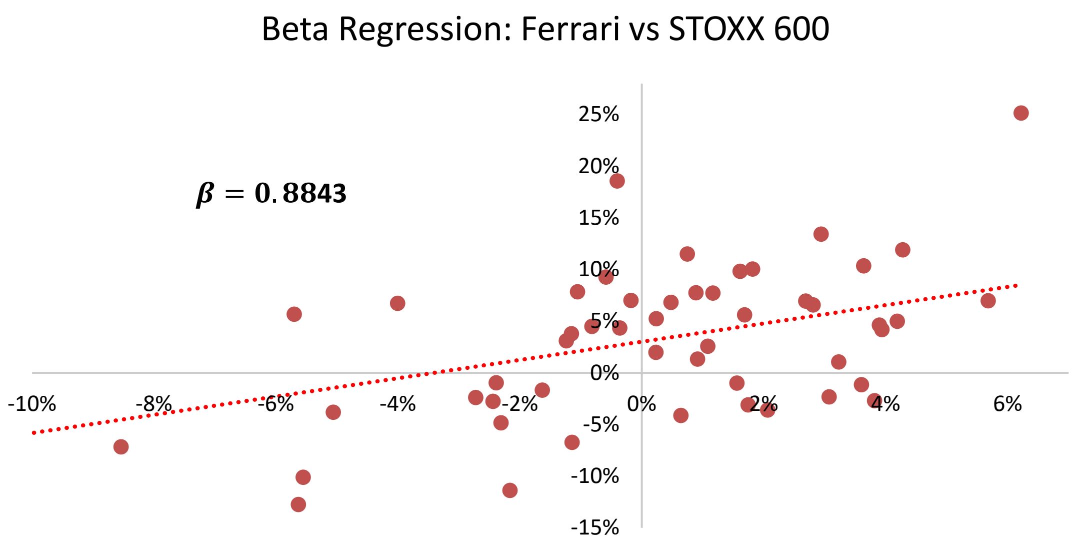
Table 3: Summary of Base-Case Scenario Major "Covid-19 Adjustments" (2020E & 2021E)

In *Table 3*, the major "Covid-19 Adjustments" are presented which are assumed to mainly effect the previous 2020 expectations, and to a lesser extent those of 2021.

Cost of Equity

Ferrari's cost of equity was computed based on the CAPM. Considering that the company is based in Europe, which accounts for half of its revenues, the 10-years German Government Bond was taken as proxy for the risk-free rate. Even though government bonds are not completely free of risk, the German AAA rated bond is the one that mostly resembles the characteristics of a risk-free rate security among European countries.

The company's beta has been estimated through the market model regression, comparing monthly returns of Ferrari against the STOXX 600 Index, which appears a reliable proxy for European market where the company's main competitors are listed. Afterwards, the raw Beta estimated at 0.88 was smoothed according to the Blume Formula, in order to maintain DCF and Relative valuations as least influenced by each other as possible. The final adjusted Beta is equal to 0.94 suggesting Ferrari appears slightly less volatile than the market.



Graph 2: Market Model Regression (Beta) – Ferrari Stock vs STOXX 600 Index – Source: Thomson Reuters

For consistency reasons, the same market index was considered for the computation of the market risk premium. Based on yearly returns for the past 15 years, a market return of 6.02% was reached. Finally, a CRP was considered as a separate risk factor, as provided by Damodaran, weighted according to a variable identified by lambda (λ) equal to 60%. The reason is to account for Ferrari's particular exposure to Italian environment, by virtue of having its entire manufacturing activities located in Italy, thus subject to its macroeconomic forces as recently testified by the Covid-19 situation.

Cost of Equity	
Risk-free rate (10y German Bund)	-0,45%
Raw Beta	0,88
Adjusted Beta	0,92
Market Return (STOXX 600)	6,02%
Country Risk Premium (CRP)	2,90%
Cost of Equity	**7,26%**

Table 4: Cost of Equity Main Components and Calculation

In light of these considerations, a cost of equity of 7.26% for Ferrari was achieved, which resembles the current market conditions and company positioning.

Cost of Debt

Relying on information disclosed by Thomson Reuters and Ferrari's annual reports, it was possible to obtain its cost of debt. A detailed summary of the characteristics that define Ferrari different tranches of debt is summarized below.

Cost of Debt						
(€ million)	Outstanding	YTM	Market Value	Weight	Issue Date	Maturity
Bond & Notes Obligations						
2021 Bond	500	1,45%	507	24%	16-Nov-17	16-Jan-21
2023 Bond	385	1,83%	392	19%	16-Mar-16	16-Mar-23
2029 Notes	150	1,12%	152	7%	31-Jul-19	31-Aug-29
2031 Notes	150	1,27%	152	7%	31-Jul-19	31-Aug-31
Bonds and Notes	1185		1203	57%		
Other Obligations						
Asset-backed financing (securitizations)	788	2,19%	788	37%	Revolving	
Lease liabilities	60	4,50%	60	3%		
Borrowing from banks	33	2,24%	33	2%	Due within 1 year	
Other Debt	23	0,25%	23	1%		
Total Debt	**2090**		**2107**	**100%**		

Table 5: Ferrari's Debt Breakdown 2019 and Cost of Debt

As shown, the majority of the company's debt is publicly traded, hence it was possible to value it at market prices. For the remaining part that is privately held, a synthetic rating based upon the interest coverage ratio was performed as suggested by Damodaran. Based on the weighted average of the YTM of the different debts presented, considered at their market values, a pre-tax cost of debt of 1.85% was obtained, which is equal to a 1.48% rate on an after-tax basis.

Target Capital Structure

The last variable necessary to obtain Ferrari's cost of capital is identified by its target capital structure. As can be seen in *Appendix 12*, Ferrari's Debt-to-Equity ratio has been stabilized after the strategy undertaken to pay back its debt obligations used for financing its IPO. The same *Appendix*, together with *Figure 14* about the company's debt structure, shows how a stable and efficient capital structure was reached following the listing. Thus, the capital structure is assumed to remain constant at the current level.

Weighted Average Cost of Capital

Ferrari's WACC is the combination of the variables computed and extracted so far, summarized in the table below.

Weighted Average Cost of Capital (WACC)	
Cost of Debt (Kd)	1,48%
Market Value of Debt (D)	2107
Debt Weight (D/(D+E))	7,6%
Cost of Equity (Ke)	7,26%
Market Value of Equity (E)	25669
Equity Weight (E/(D+E)	92,4%
WACC	**6,82%**

Table 6: Ferrari's WACC Main Components and Calculation Summary

Standing at a level of 6.82%, it resembles recent market conditions and appears in line with the characteristics, position and geographical exposure of the company.

Discounted Cash Flow Valuation

Even though the information provided so far characterize the base-case scenario, in order to mitigate and account the key problem of a DCF, namely that it is based on assumptions, a scenario analysis was performed exploring different prospects, as shown below.

Main Assumptions	Worst Case Scenario	Base Case Scenario	Best Case Scenario
Cars & Spare Parts CAGR	6,11%	7,33%	9,93%
Units Sold CAGR	3,68%	4,75%	7,25%
Average Price CAGR	2,35%	2,46%	2,50%
Sponsorship, Commercial & Brand CAGR	4,19%	4,80%	5,58%
Revenues CAGR	**4,86%**	**6,38%**	**8,19%**
COGS as % of Related Revenues	50,05%	49,27%	48,71%
Gross Profit Margin Average	**58,20%**	**58,68%**	**58,81%**
SG&A as % of Related Revenues	63,86%	63,53%	63,11%
R&D as % of Related Revenues	18,93%	18,59%	18,05%
EBITDA Margin Average	**35,09%**	**36,02%**	**36,81%**
D&A as % of CAPEX	63,74%	63,84%	63,88%
EBIT Margin Average	**24,97%**	**25,55%**	**26,36%**
Tax Rate	24,00%	20,00%	19,00%
CAPEX	19,19%	19,75%	19,53%
Target Share Price	**€ 132,61**	**€ 158,03**	**€ 183,52**

Table 7: DCF Scenario Analysis (Worst-Base-Best Case Scenarios)

In the worst-case scenario the company is expected to limit the units produced to preserve the brand exclusivity due to production volume restrictions and emission limits. Simultaneously, R&D and CAPEX are assumed to slightly decrease from previous expectations following the uncertainties of tax breaks applicability which put the tax rate at 24%. Consequently, Ferrari's revenues are expected to show a CAGR of 4.8% with an EBITDA margin of 35%. On the other hand, the best-case scenario contemplates a significant increase in units sold (CAGR: 9.93%)

exploiting its wider product portfolio thanks also to milder restrictions concerning production volume. In these circumstances Ferrari is supposed to obtain higher operating margins that allows it to increase investments to support the expansion facilitated by the applicability of the Patent Box Tax Regime. However, most likely Ferrari is assumed to fall back into the base-case scenario, whose main assumptions are summarized in the table below.

	2015A	2016A	2017A	2018A	2019A	2020E	2021E	2022E	2023E	2024E
Revenues	2854	3105	3417	3420	3766	3868	4271	4608	4816	5027
Cost of Sales	1341	1436	1491	1449	1593	1694	1800	1905	1971	2038
Gross Profit	**1513**	**1669**	**1926**	**1971**	**2173**	**2174**	**2471**	**2703**	**2845**	**2989**
Gross Profit margin	*53,02%*	*53,74%*	*56,37%*	*57,62%*	*57,70%*	*56,21%*	*57,85%*	*58,65%*	*59,08%*	*59,46%*
SG&A	339	295	329	327	343	330	369	401	418	432
R&D	447	510	557	528	560	580	619	646	648	667
EBITDA	**717**	**843**	**1.036**	**1115**	**1269**	**1264**	**1483**	**1656**	**1779**	**1890**
EBITDA margin	*25,13%*	*27,13%*	*30,32%*	*32,61%*	*33,70%*	*32,69%*	*34,72%*	*35,95%*	*36,95%*	*37,59%*
D&A	273	248	261	289	352	372	426	477	538	586
EBIT	**444**	**595**	**775**	**827**	**917**	**892**	**1.057**	**1.179**	**1.241**	**1.304**
EBIT margin	*15,57%*	*19,16%*	*22,69%*	*24,17%*	*24,36%*	*23,06%*	*24,74%*	*25,59%*	*25,78%*	*25,94%*
Taxes	144	168	209	16	177	178	211	236	248	261
EBIAT	**300**	**427**	**567**	**810**	**741**	**714**	**846**	**943**	**993**	**1043**
Plus: D&A	273	248	261	289	352	372	426	477	538	586
Less: CAPEX	356	342	392	639	706	738	737	751	762	763
Less: Increase in NWC		-337	43	205	-246	7	53	45	21	21
Unlevered Free Cash Flow						**341**	**481**	**625**	**748**	**844**
Present Value of Free Cash Flow						**329**	**436**	**530**	**594**	**628**

Table 8: Ferrari's Free Cash Flow Calculation Summary Development (2015A-2024E)

FCFF are expected to increase with a slowdown in the final years due to the state of equilibrium achievement. The TV has been computed considering a terminal growth of 2.5% in perpetuity. This rate relies on long-term expectations of the luxury cars industry and macroeconomic variables that characterize the geographies where Ferrari competes. Namely, the expected inflation, GDP and HNWI growth rates were analyzed, concluding that Ferrari is not expected to completely benefit from general future growth because of production limitations, that have to be maintained to balance exclusivity. Thus, this rate is the result of the weighted average of the expected inflation rates where the company operates equal to 1.75%, determined by the OECD, and the growth expectations in GDP and HNWI wealth in APAC countries, where Ferrari is anticipated to increase its penetration, relative to its market share.

Enterprise Value	
Cumulative Present Value of FCF	**€ 2.516**
Terminal Year Free Cash Flow (2024E)	€ 844
Implied Perpetuity Growth Rate	**2,50%**
WACC	6,82%
Present Value of Terminal Value	**€ 26.962**
% of Enterprise Value	*91%*
Enterprise Value	**€ 29.479**

Implied Equity Value & Share Price	
Enterprise Value	**€ 29.479**
Less: Total Debt	-€ 2.090
Less: Noncontrolling Interest	-€ 3
Plus: Cash and Cash Equivalents	€ 901
Implied Equity Value	**€ 28.287**
Number of Shares Outstanding	179
Implied Share Price	**€ 158,03**

Table 9: "Enterprise Value" (Left) and "Implied Equity Value and Share Price" (Right) Main Components and Calculation Summary

Discounting FCFF and TV, the fair EV is estimated at 29.5 billion euros, which implies an EV/EBITDA multiple of 19.9x, which mostly resembles the 19.7x obtained for Ferrari indicating a higher premium to its peers than it is already trading. The EV was then adjusted for Ferrari's Net Debt and Non-Controlling Interests in order to obtain the equity value which provides a target share price of EUR 158.03, within the range of EUR 132.61-183.52 according to the scenario analysis.

Implied Share Price Sensitivity Analysis

WACC \ Implied Perpetuity Growth Rate	1,50%	2,00%	2,50%	3,00%	3,50%
5,82%	150,75	170,26	195,64	230,03	279,23
6,32%	138,48	154,35	174,37	200,42	235,70
6,82%	128,52	141,74	158,03	178,57	205,30
7,32%	120,29	131,52	145,09	161,79	182,87
7,82%	113,37	123,07	134,59	148,51	165,65

Figure 27: Sensitivity Analysis Implied Share Price (Implied Perpetuity Growth Rate vs WACC)

Afterwards, as shown in the sensitivity analysis above, the major assumptions were stressed to changes of ±50p.p. to see the impact on the Target Price which shows a price range of EUR 113.37-279.23.

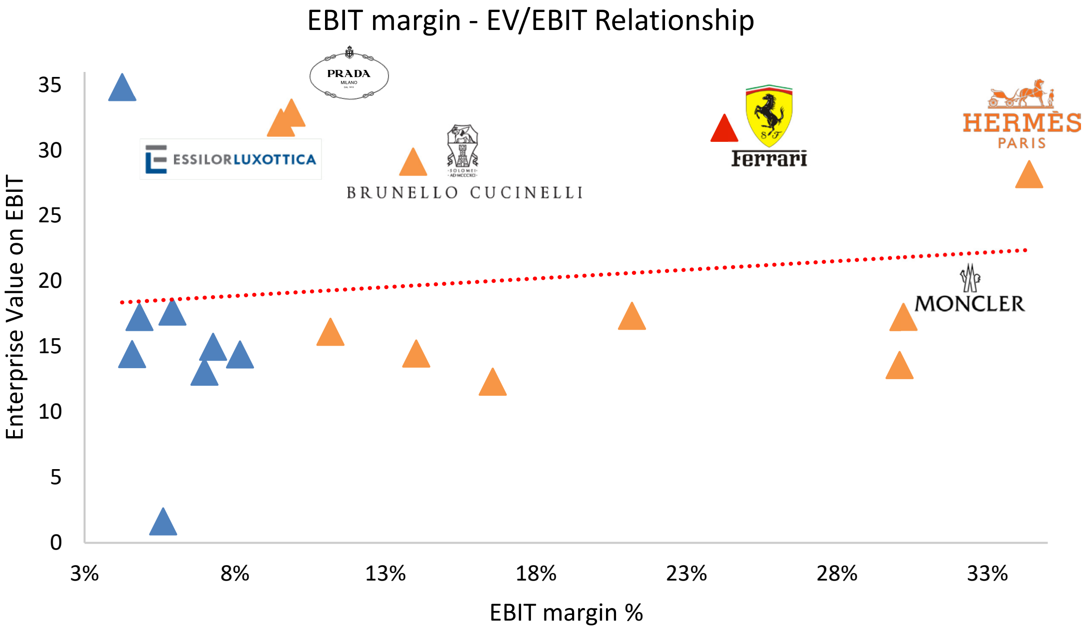
Relative Valuation

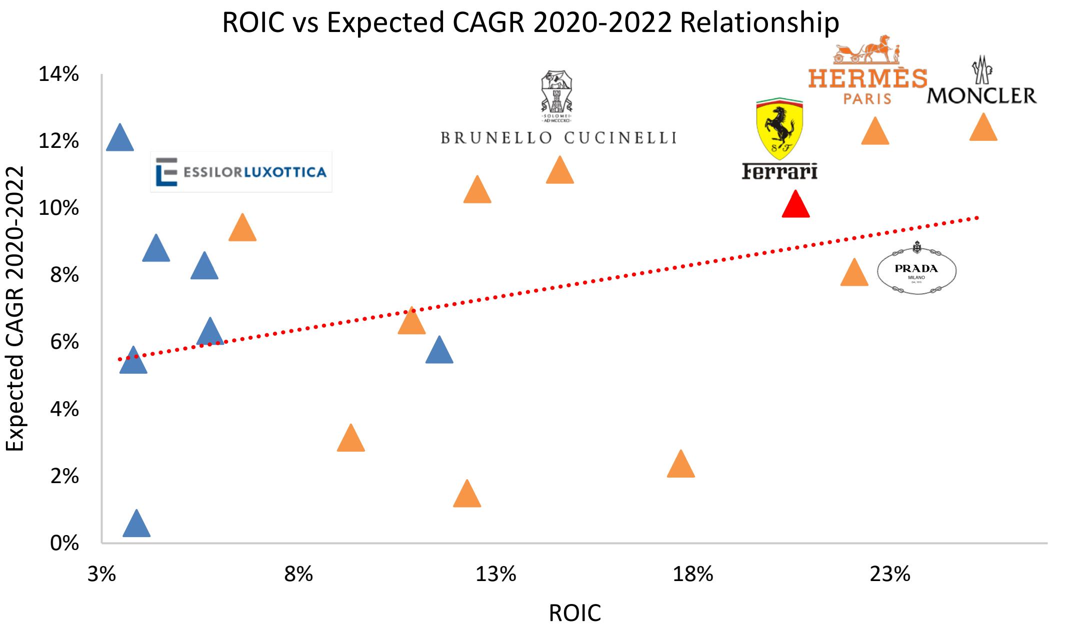
In the following paragraph, the relative valuation of Ferrari is presented. Firstly, the basket of companies that most resembles Ferrari's characteristics has to be determined. Then, the multiple valuation itself is performed based on forward multiples, reaching a range of valuation.

Comparable Companies

Ferrari positions itself in a specific niche of the automotive industry, making it extremely difficult to identify comparable companies within the sector. To overcome this limitation, a cluster analysis including automotive and luxury players was performed. As shown in *Graph 3*, it can be concluded that Ferrari follows more closely the dynamics that influence the luxury industry, namely growth rate, profitability and size.

First of all, on average automotive players appear to be huge conglomerates with different brands operating in multiple markets (i.e. Volkswagen, Daimler, BMW, Ford, General Motors, Toyota, etc …), presenting lower profitability relying on larger volumes. Moreover, the industry is expected to grow at an inferior pace due to constraints such as demand contraction, due to car saturation peak in wealthier regions, rideshare and car-sharing services that are replacing personal vehicles in densely populated areas, stricter pollution laws and significant R&D expenses necessary to keep up with current trends. On the contrary, luxury players appear to be smaller in size with higher operating margins and phenomenal growth expectations, following the trend in wealth creation.





Graph 3: [(A)-Above] Cluster Analysis Based on Operating Metrics (EBIT Margin vs EV/EBIT); [(B)-Below] Cluster Analysis Based on Growth Expectations [ROIC vs Exp.(CAGR 2020-2022)] – Source: Thomson Reuters

Relying on this analysis, it is possible to better understand the relationship between two correlated variables and, in accordance with that, select the most appropriate group of companies. In *Graph 3*, the relations between operating metrics (*EV/EBIT–EBIT Margin)* and growth expectations (*Expected CAGR–ROIC)* are examined, showing that Ferrari better resembles the characteristics of luxury companies overall.

Afterwards, to select the most reliable basket of firms, the minimum distance between each pre-selected firm and the centroid, identified by Ferrari, was used as rationale. According to this approach, it is possible to identify those companies that deviate as little as possible from Ferrari's values. Afterwards, the group was further restricted based on more detailed considerations, such as differences in their holding nature (i.e. LVMH, Kering and Richemont) and historical performance trend (i.e. Ferragamo and Burberry). The detailed list with the companies analyzed can be found in *Appendix 18*.

Multiple Valuation Results

After selecting the group of companies as similar as possible to Ferrari, summarized in *Table 10*, the most suitable multiples were computed through data extracted from Thomson Reuters. For the purposes of evaluation forward-looking multiples were taken into consideration, based on the consensus estimates of accredited investment banks' equity research department. Consequently, these should be taken as a reference point to gather insights about how the market views and prices companies operating in the luxury industry.

Company Name	Enterprise Value	Forward EV/EBITDA	Forward PER
Ferrari NV	**31.773**	**19,7x**	**36,6x**
Hermes International SCA	73.110	25,9x	41,6x
Prada SpA	11.377	13,0x	53,4x
Brunello Cucinelli SpA	2.701	19,3x	48,2x
Moncler SpA	9.608	14,8x	25,4x
EssilorLuxottica SA	59.051	13,2x	24,1x
Multiples Harmonic Average	**31.270**	**17,2x**	**38,5x**

Table 10: Ferrari's Selected Peer Group Forward Multiples – Source: Thomson Reuters

In order to isolate possible different capital structure decisions, entity value multiples were considered such as *EV/EBITDA, EV/EBIT* and *EV/Sales* which measure operating performance and are not affected by different tax rules. Among them, EV/EBITDA was chosen since it is free of arbitrariness concerning the accounting for D&A expenses (Lohnert & Bockmann 2005). The median is set at 17.2x against Ferrari's 19.7x, meaning that the company trades at the high-end compared to its peers.

Moreover, to account for risk and EPS growth, pricing multiples were incorporated in the valuation. Even though, *Price-to-Earnings (P/E)* multiple can be manipulated by changing capital structure, and different accounting policies affect net income as the bottom line value, it can be seen as a reliable indicator. Hence, considering the luxury industry where firms report solid earnings, are subject to relatively uniform accounting policies, and operate with similar capital structures, the integration of pricing multiples appears justified. Namely, the *PER* median is 38.5x against Ferrari's 36.6x which means that on average its comparable companies trade at a slightly higher premium.

Relative Valuation	Forward EV/EBITDA		Forward PER	
Ferrari		19,7x		36,6x
Multiple (harmonic mean)		17,2x		38,5x
Enterprise Value (million)		27.797		30.687
Equity Value (million)		26.605		29.496
Share price	**€**	**148,60**	**€**	**164,80**

Table 11: Relative Valuation Summary Based on Forward Enterprise and Price Multiples

In order to reach a reliable value, considering both the possible under- and over-valuation of the multiples used, an average was considered, within the range between EUR 148.60-164.80, equal to EUR 156.70.

Comparison of Valuation Results

Relying on different assumptions and methodologies, usually different approaches do not provide the same value. Thus, it is common practice to present a range of values, which is the result of the methods used. In the following Football Field figure, the valuation techniques are summarized, and it visually shows the spectrum achieved, and where, on average, the target valuation lies compared to the metrics used.

The closing price on April 30th, 2020, is EUR 143.40. The main valuation method, represented by the DCF, reached a target value of EUR 158.03 within the range of EUR 132.61-183.52, or an upside potential of 10.20% on average. Concerning the relative valuation, a share price equal to EUR 156.70 was obtained, representing an upside potential of 9.27%. Blending together the results achieved with these approaches the target price is set at EUR 157.37 or 9.74% above current levels, within the range of EUR 153.44-161.30 considering a margin of ± 2.5% from the value reached.

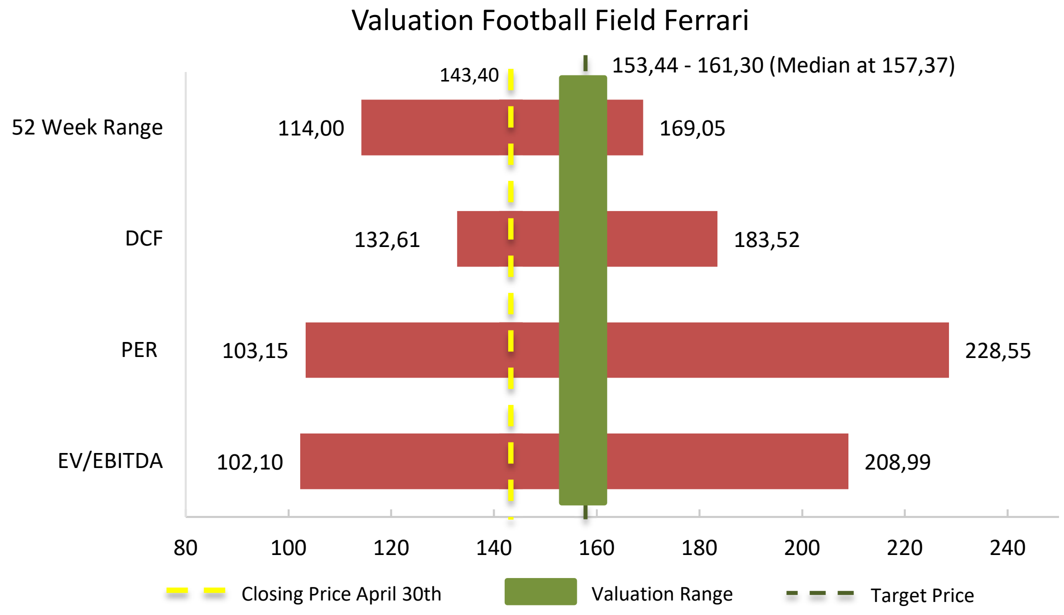


Figure 28: Valuation Football Field Summary Ferrari

Equity Report Comparison

In order to look for discrepancies in assumptions and valuation techniques used, a comparison with an equity report issued by an Investment Bank was carried out. The equity research selected came from UBI Banca, which constantly updates its valuation and has also incorporated the Covid-19 effects. The most recent was issued on April 2nd, 2020, revising its previous valuation carried out on November 4th, 2019.

The investment recommendation is identified by a BUY (maintained) strategy, with a target price set at EUR 160 (from EUR 180) considering the trading price at the time at EUR 136, or an upside potential of 17%. The reduction in the target price by 11% is due to estimates cut, the increase in risk-free assumptions and peers de-rating. As from its initiation of coverage (October 15th, 2019) the valuation is based on the average between a DCF, EVA and peer comparison. The latter incorporates a group of peers which is assumed to be more comparable to Ferrari positioning, including Hermes, Brunello Cucinelli and Essilor-Luxottica. The rationale used reflected the peculiarity of self-imposed production limits and controlled distribution. The multiple valuation is conducted through forward multiples EV/EBITDA and PE ratio between 2021 and 2022, which provide an estimate of EUR 138. The average EV/EBITDA is set at 12.1x (from 16.6x in November) compared to 17.2x used in this valuation and the P/E ratio of 29x compared to 38.5x, but at the same time relying on higher expected EBITDA and EPS. These discrepancies can be explained by the limited number of comparable companies considered, and the inclusion of Brunello Cucinelli and Essilor-Luxottica that trades at the lower-end of the industry, and finally to its peer de-rating assumption.

Concerning the main valuation model, identified by the DCF method, *Table 12* presents the main differences in the assumptions between this dissertation and UBI Banca report.

Differences in Main Assumptions		
	Thesis	**UBI Banca**
Underlying Valuation Date	April 30th, 2020	April 2nd, 2020
Methods Used	DCF & Relative Val.	EVA; DCF & Relative Val.
Compared Traded Share Price	143,4	136,7
Upside/Downside	9,74%	17,04%
Recommendation	BUY	BUY
Explicit Forecast Period	5 years (2020-2024)	5 years (2020-2024)
Risk-free Rate	-0,45%	2,50%
Beta	0,93	1
Cost of Equity	7,26%	7%
WACC	6,82%	6%
Perpetuity Growth Rate	2,50%	4%
Expected Revenues CAGR	5,90%	9,50%
EBITDA margin (average)	35,58%	36,63%
EBIT margin (average)	25%	25,3%%
Equity Value	28287	29568
Target Price	**EUR 157,37**	**EUR 160**

Table 12: Thesis Valuation vs UBI Banca Equity Report Main Differences in Assumptions

The same explicit period is considered, at the end of which Ferrari is assumed to reach a steady state. However, UBI's assumptions appear more expansive and optimistic regarding Perpetuity Growth Rate, WACC, revenues and EBITDA margin. While target prices differ slightly, the difference (1.67%) does not appear to be significant. Moreover, the UBI's recommendation was compared to the general consensus of analysts following Ferrari.

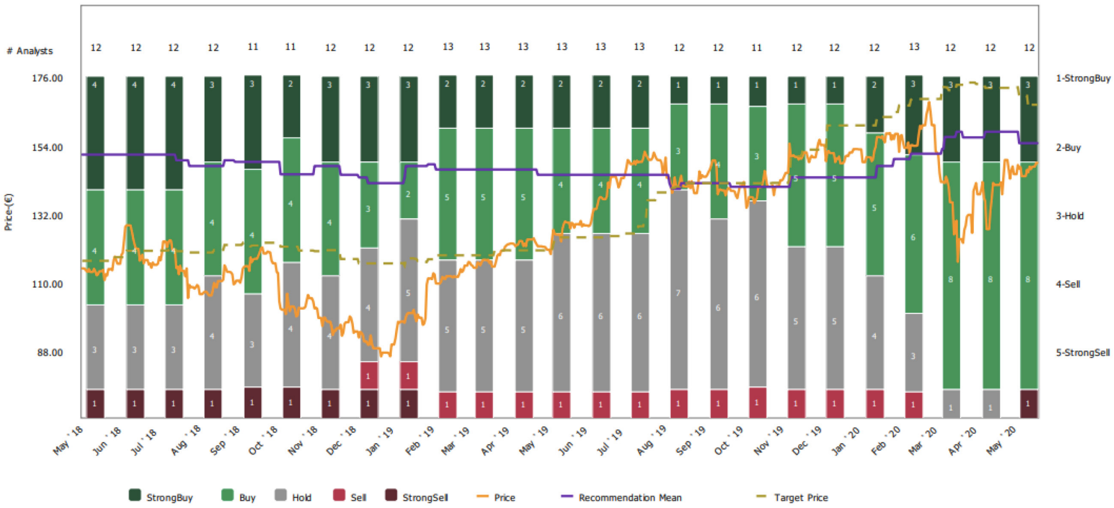


Figure 29: Major Analysts Recommendations Summary - Source: Thomson Reuters

As of April 30th, the average target price is set at EUR 169.20, with 92% of recommendations set at BUY or STRONG-BUY, even though most of them were issued before the recent pandemic.

Conclusion

This dissertation aims at determining the target price of Ferrari. Different valuation methods, namely the Discounted Cash Flow and Relative Valuation, which are assumed to be the most appropriate and reliable approaches for this purpose, are used to this end.

Throughout this thesis, the industry and environment in which the company is positioned has been analyzed, in order to assess the competitive forces, potential risks and growth opportunities faced by Ferrari. Next, Ferrari's historical performance has been taken as a base to make assumptions regarding its future prospects, which contemplate a measured but significant growth. According to the DCF method, a median share price of EUR 158.03 is obtained within the range of EUR 132.61-183.52, according to the scenario analysis. The main assumptions were stressed in a sensitivity analysis exercise, namely WACC and Perpetuity Growth Rate, which provided a range value of EUR 113.37-279.23. Finally, with the aim to further test the hypothesis that were made, a relative valuation has been performed relying on forward-looking multiples such as the EV/EBITDA and PER. This analysis returns a share price of EUR 148.60 and EUR 164.80 respectively, or a median of EUR 156.70. Blending together the results of these methods, a target price of EUR 157.37 is obtained, in the range of EUR 153.40-161.30 given a margin of ± 2.5% from the fair value. Compared to the current trading price of EUR 143.40 (April 30th, 2020), an investor faces an upside potential of 9.74%, which can be translated in a BUY recommendation, in line with the equity report by UBI Banca analyzed and the general consensus of the analysts following Ferrari.

Appendix

Appendix 1: Liquidation and Accounting Valuation

The liquidation and accounting valuation are two approaches built with the aim of valuing the current assets of a firm, relying on accounting estimates. Based on the DCF valuation principle, it can be argued that the value of a company is the sum of the values of the individual assets it owns. The only limitations, as already discussed, is that a business is an on-going entity. In an asset-based approach, the primary focus is on the assets in place that the company already has, estimating their value separately. The sum of them will yield the value of the firm, but for companies with exponential growth opportunities, this method will obviously reach lower values compared to going concern valuations.

One special case of asset-based valuation is the liquidation method. It assumes the case in which the company has to be liquidated. Intuitively, it should obtain a similar value from the DCF method, but in practice it usually results in a discount on the value dictated by the urgency associated with liquidating assets. In other words, it is most suitable for valuing distressed companies, while for healthy firms with significant growth opportunities, it will provide conservative estimates of value.

Damodaran (2010), identifies the earnings-based models as the most common one among asset-based valuation approaches. It is built on a combination of book values and expected future earnings and is referred to as residual model. Ohlson's basic model (1995) claims that the fair value of equity is a function of its book value and the excess returns that the firm will be able to generate in the future.

The value of Ferrari depends not only on assets in place, but extensively on growth assets and the business itself is expected to continue its operations in the future. Due to these limitations these valuation approaches appear to be not reliable on assessing its fair value and are not performed.

Appendix 2: Contingent Claim Valuation

Contingent claim valuation is built around valuing a company's current assets, starting with accounting estimates of value or book value, relying on option pricing models to measure the value of assets that have option-like features. In this context, equity can be viewed as a call option on the value of the underlying firm, with the face value of debt representing the strike price and term of the debt measuring the life of the option (Damodaran, 2010). Option pricing models present different limitations. For options with long lifetimes, assumptions made about constant variance and dividend yields are easily contestable. Furthermore, when the underlying asset is not traded, the inputs for the value of the underlying asset and the variance in that value cannot be extrapolated from financial markets and have to be estimated.

For the valuation of Ferrari, the contingent claim valuation approach is not considered suitable. Its weak applicability is due to the lack of information for the target company, which result not sufficient for a reliable application of this method.

Appendix 3: History of Ferrari

Ferrari is named after its founder Enzo Ferrari. An Alfa Romeo driver since 1924, he founded his own racing team, Scuderia Ferrari, in Modena in 1929 initially with role of technical-competitive branch of Alfa Romeo. In 1939, Ferrari founded an automobile company, Auto Avio Cotruzioni, which in 1943 moved its headquarters from Modena to Maranello, which remain Ferrari's headquarters to these days. After the Second World War, Enzo founded the Ferrari car brand, after the clause that linked Ferrari to Alfa Romeo preventing him from using his surname on the cars produced expired. The first racing car bearing Ferrari's name was produced in 1947, the 125S, while in 1948 the first road car, the Ferrari 166 Inter, was produced. In 1950, the company began participating in the Formula 1 World Championship, which makes Scuderia Ferrari the longest running Formula 1 team. Starting in 1955, the Fiat Group showed interest in Ferrari, financing the development of the Scuderia, but only in 1969 it acquired a stake in the company. A 50% stake was acquired back than, which subsequently increased to 90% in 1969, following the death of Enzo Ferrari, while the remaining 10% passed to his son Piero Ferrari.

Ferrari became an independent, publicly traded company following its separation from FCA, which was completed on January 3, 2016, trading on the NYSE in October 2015, and on the MTA on January 4, 2016 under the ticker symbol RACE.

Appendix 4: Initial Public Offering and Spin-Off

At the end of October 2014, FCA Group announced its intention to separate Ferrari S.p.A. from FCA ("The Separation"). It was completed in January 2016, through a series of transactions and a special purpose vehicle (SPV). On October 2015, Ferrari completed a restructuring intended to facilitate the initial public offering ("IPO"), which resulted in the establishment of New Business Netherlands N.V., then renamed Ferrari N.V. ("Predecessor Ferrari") as the holding company of the Ferrari group holding a 100% interest in Ferrari S.p.A. Immediately prior to the IPO, FCA held approximately 90% of Predecessor Ferrari, and Piero Ferrari held the remainder. As part of the restructuring, Predecessor Ferrari incurred in debt through the issue to FCA of a promissory note (the "FCA Note"). FCA priced an IPO of Predecessor Ferrari representing approximately 10% of the common share capital on the NYSE under the ticker symbol "RACE" at an initial IPO price of $52. Consequently, Ferrari repaid the FCA Note with the proceeds of a loan drawn under a syndicated credit facility with a group of lenders. In January 2016, two consecutive demergers took place (the "Demergers"), transferring the equity interests in Predecessor Ferrari held by FCA, to the shareholders of the latter. Immediately after the Demergers, Predecessor Ferrari merged with and into Ferrari, as surviving company (the "Merger") and Ferrari became the holding company of the Ferrari business.

According to the characteristics of the operation, each holder of Predecessor Ferrari common shares received one Ferrari common share for each Predecessor Ferrari common share, FCA shareholders received one Ferrari common share for every 10 FCA common shares and holders of MCS received 0.77 Ferrari common shares for each MCS unit (consisting of $100 in notional amount of MCS) held. On January 4, 2016, the business day following effectiveness of the Merger, Ferrari common shares began trading on the MTA, the stock exchange managed by Borsa Italiana, at an initial IPO price of EUR 43,44.

Appendix 5: Loyalty Voting Program

Subject to meeting certain conditions, the company's common shares can be registered in the "Loyalty Register". By keeping the shares for a three-year period, eligible holders are entitled to receive one special voting share in respect of each qualifying common share, which in turn entitles the holder to exercise one vote at the Company's shareholders meeting. Following the Separation, Exor and Piero Ferrari participate in the Company's loyalty voting program, holding effectively two votes for each common share. This may make it more difficult for a third party to attempt to acquire control of the company.

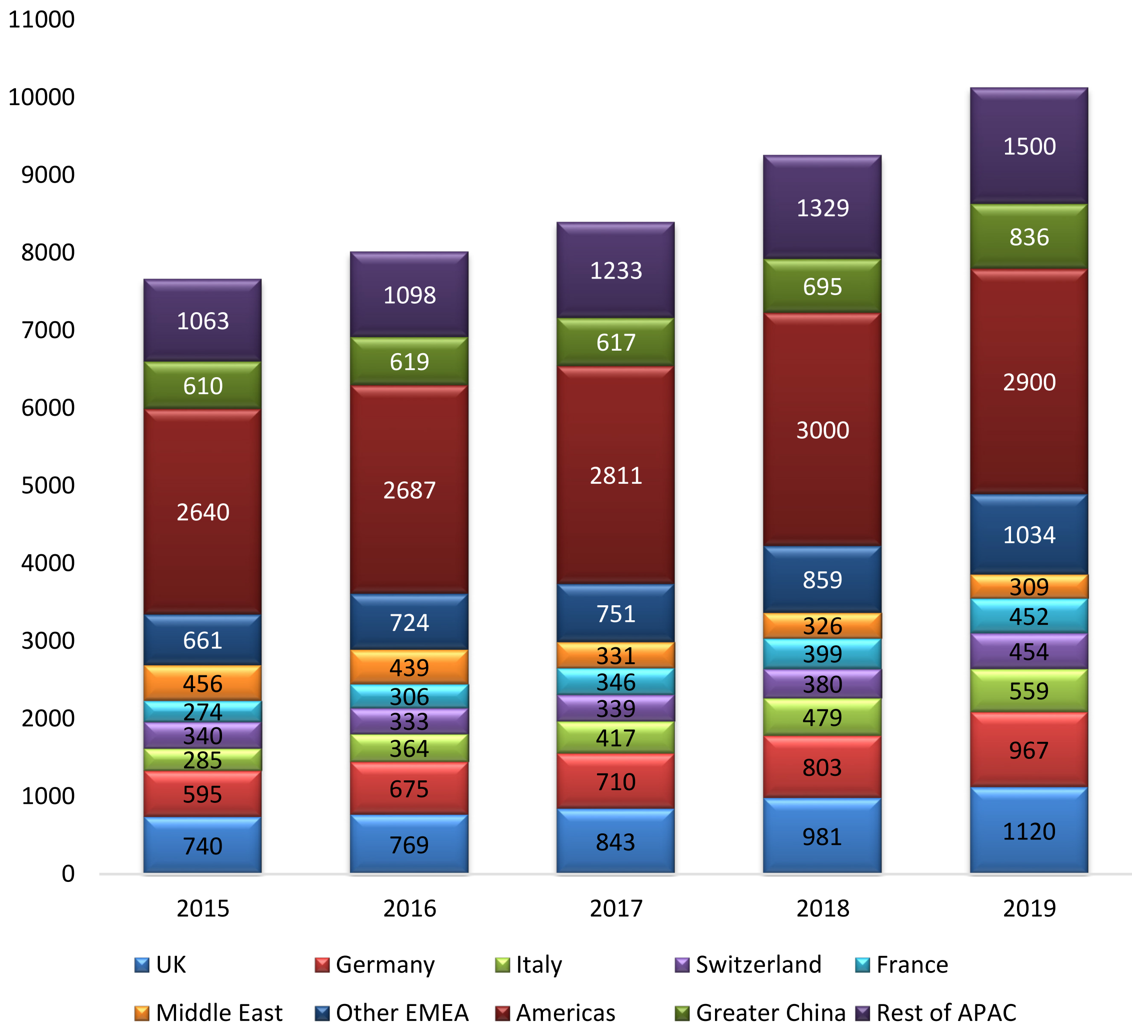
The achievement of the loyalty voting program is represented by the lower trading liquidity activity which could negatively shake the market prices of common shares. Therefore, with this program Ferrari's main goal is to keep shareholders, let them be part of the company not only for financial purpose but also to give them the decisional right in relation to the percentage of shares they own.

Appendix 6: EXOR N.V. Description

Exor N.V. is an investment holding company based in the Netherlands. It resulted from a cross-border merger of its predecessor entity, Exor S.p.A. with and into Exor N.V. The Company invests in companies from different sectors, mainly in Europe and in the United States, such as in PartnerRe, a reinsurance company; Fiat Chrysler Automobiles (FCA); CNH Industrial; Ferrari; The Economist and Juventus. FCA, CNH Industrial, Ferrari, PartnerRe and Juventus Football Club, together with Holdings System, constitute the Company's six operating segments. Exor is controlled by Giovanni Agnelli B.V., which holds 52,99% of its share capital, based on regulatory filings with the Netherlands Authority for the Financial Markets. G.A. is a Dutch private company with limited liability founded by Giovanni Agnelli and currently held by members of the Agnelli and Nasi families. Its present principal business activity is to purchase, administer and dispose of equity interests in public and private entities and, in particular, to ensure the cohesion and continuity of the administration of its controlling equity interests.

Appendix 7: Top 10 Strongest Brand 2020 by Brand Finance

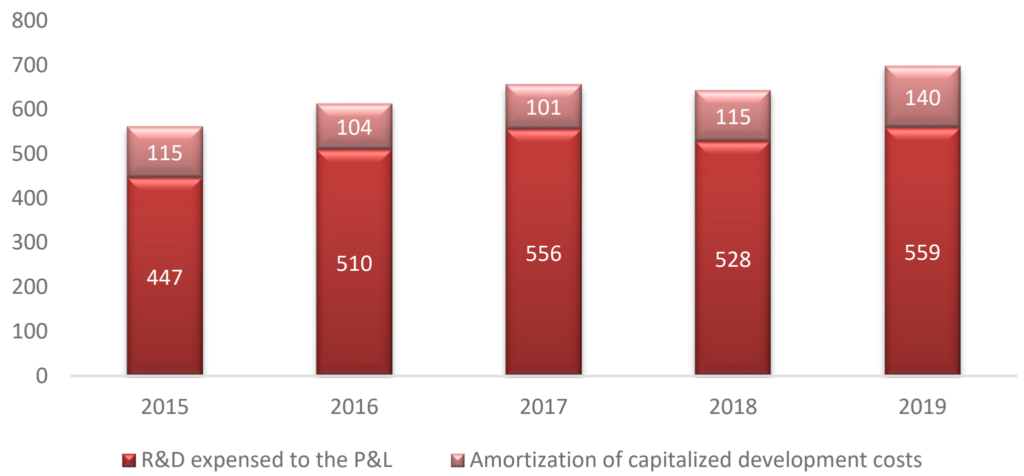
Appendix 8: Historic Breakdown of Shipments by Geography



Appendix 9: SWOT Analysis

Strengths	Weaknesses
• Extremely strong brand image • High level of customer satisfaction • Successful track record of product innovation and use of technology • Highly skilled workforce • Strong presence in the racing world • Automation of activities (possibility to scale up or down based on demand and consistency of quality) • Reliable suppliers	• Limited distribution and service network • Losing out to competitors due to long waiting list • Limited customer base • High attrition rate in work force
Opportunities	**Threats**
• Economic uptick and increase in customer spending (especially in Asia-Pacific) • Development of new technologies • Electric and hybrid segments	• Intense competition • Restriction on emission norms • Economic uncertainty • Changing customers' preferences

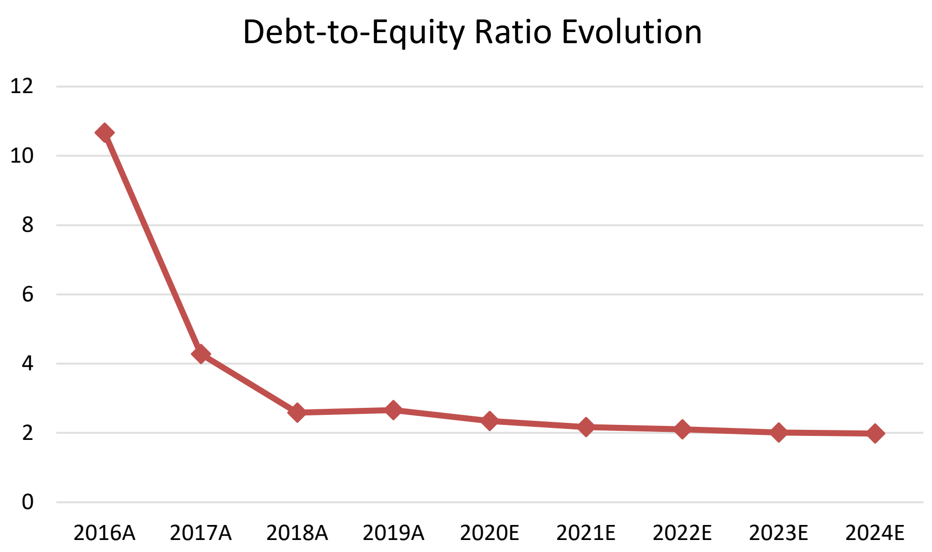
Appendix 10: R&D Expenses & Related Amortization Costs Analysis (2015-2019)



Appendix 11: Ferrari's Cash Conversion Cycle (2015-2019)

	2015A	2016A	2017A	2018A	2019A
Trade Receivables Outstanding Days	*20*	*29*	*26*	*23*	*22*
Receivables from Financing Activities Outstanding Days	*150*	*93*	*78*	*94*	*94*
Current Tax Receivables	*2*	*0*	*1*	*14*	*2*
Days Sales Outstanding (DSO)	172	122	105	130	118
Days Sales Inventory (DSI)	80	82	96	98	96
Deferred Tax Assets (% Sales)	4,3%	3,8%	2,8%	1,8%	2,0%
Other Current Assets (% Sales)	1,6%	1,7%	1,3%	1,9%	2,5%
Days Payable Outstanding (DP0)	138	156	149	165	163
Accrued Expenses (% of COGS)	7,0%	6,8%	7,7%	7,4%	7,2%
Customer Advances (% of Sales)	15,5%	16,2%	12,9%	12,2%	16,6%
Income Tax Payables (% of GOGS))	9,3%	2,9%	2,0%	0,5%	0,4%
Deferred Tax Liabilities (% of Sales)	0,8%	0,4%	0,3%	1,1%	2,2%
Other Payables (% of COGS))	3,0%	1,3%	1,4%	1,3%	1,3%

Appendix 12: Debt to Equity ratio evolution (2016-2019)



Appendix 13: Ferrari Restated Income Statement Forecast Summary

Restated Income Statement						Explicit Period				
	2015A	**2016A**	**2017A**	**2018A**	**2019A**	**2020E**	**2021E**	**2022E**	**2023E**	**2024E**
Total Revenues	2.854	3.105	3.417	3.420	3.767	3.868	4.271	4.608	4.816	5.027
Cars and spare parts	2080	2180	2456	2535	2926	3132	3482	3778	3969	4167
Engines	219	338	373	284	198	144	113	96	89	88
Sponsorship, commercial and brand	441	488	494	506	538	486	576	631	658	680
Other	114	99	94	95	104	106	108	110	112	114
Cost of Sales	1.341	1.436	1.491	1.449	1.593	1.694	1.800	1.905	1.971	2.038
Gross Profit	**1.514**	**1.669**	**1.926**	**1.971**	**2.174**	**2.174**	**2.471**	**2.703**	**2.845**	**2.989**
Selling, General & Administrative Costs	339	295	329	327	343	330	369	401	418	432
Research & Development Costs	447	510	557	528	560	580	619	646	648	667
EBITDA	**717**	**843**	**1.036**	**1.115**	**1.269**	**1.264**	**1.481**	**1.654**	**1.777**	**1.888**
Depreciation & Amortization	273	248	261	289	352	372	426	477	538	586
EBIT	**444**	**595**	**775**	**827**	**917**	**892**	**1.057**	**1.179**	**1.241**	**1.304**
Net Financial Expenses	10	28	29	24	42	31	31	31	31	31
Profit Before Taxes	**434**	**567**	**746**	**803**	**875**	**861**	**1.026**	**1.148**	**1.210**	**1.273**
Provision for Income Taxes	144	168	209	16	177	178	211	236	248	261
Net Profit	**290**	**400**	**537**	**787**	**699**	**683**	**815**	**912**	**962**	**1.012**

Appendix 14: Ferrari Restated Balance Sheet Forecast Summary

Restated Balance Sheet						Explicit Period				
	2015A	**2016A**	**2017A**	**2018A**	**2019A**	**2020E**	**2021E**	**2022E**	**2023E**	**2024E**
Assets										
Goodwill	787	785	785	785	785	785	785	785	785	785
Intangible assets	308	354	441	646	838	1.031	1.230	1.406	1.556	1.674
Property, plant and equipment	626	669	710	851	1.070	1.244	1.381	1.505	1.612	1.696
Investments and other financial assets	12	34	30	32	39	34	37	40	42	44
Total non-current assets	**1.856**	**1.962**	**2.060**	**2.374**	**2.805**	**3.094**	**3.514**	**3.823**	**4.086**	**4.293**
Inventories	295	324	394	391	420	455	484	523	542	561
Trade receivables	158	244	239	211	231	254	281	303	317	332
Receivables from financing activities	1.174	790	733	878	966	996	1.102	1.188	1.243	1.300
Current tax receivables	15	1	6	128	21	21	23	25	26	28
Deferred Tax Assets	123	119	94	61	74	72	80	86	90	94
Other current assets	185	54	45	64	93	70	77	83	87	91
Current financial assets	9	16	16	10	11	12	12	12	12	12
Cash and cash equivalents	183	458	648	794	898	910	1.005	1.084	1.133	1.182
Total current assets	**2.019**	**1.887**	**2.081**	**2.477**	**2.641**	**2.790**	**3.065**	**3.305**	**3.451**	**3.601**
Total assets	**3.875**	**3.850**	**4.141**	**4.852**	**5.446**	**5.885**	**6.579**	**7.128**	**7.537**	**7.894**
Liabilities										
Accounts Payable	508	615	608	654	712	761	811	857	888	921
Accrued Expenses	94	98	116	107	114	122	130	137	142	148
Deferred Tax Liabilities	23	13	11	39	82	82	83	90	94	98
Other Current liabilities, Total	607	563	491	443	652	650	718	773	808	845
Customer Advances	*442*	*503*	*442*	*417*	*624*	*611*	*676*	*729*	*763*	*798*
Income Taxes Payable	*125*	*42*	*29*	*8*	*7*	*17*	*18*	*19*	*20*	*20*
Other Payables	*39*	*19*	*21*	*18*	*20*	*22*	*23*	*25*	*26*	*27*
Total Current Liabilities	**1.232**	**1.289**	**1.225**	**1.243**	**1.560**	**1.615**	**1.741**	**1.857**	**1.932**	**2.011**
Total Long-Term Debt	2.260	1.848	1.806	1.927	2.090	2.166	2.392	2.581	2.697	2.815
Other Liabilities, Total	403	382	326	328	310	344	371	393	407	421
Reserves	*142*	*215*	*197*	*183*	*166*	*200*	*221*	*238*	*249*	*260*
Pension Benefits - Underfunded	*78*	*91*	*84*	*87*	*88*	*86*	*86*	*86*	*86*	*86*
Other Long-Term Liabilities	*183*	*76*	*44*	*59*	*56*	*58*	*64*	*69*	*72*	*75*
Total non-current liabilities	**2.687**	**2.243**	**2.143**	**2.294**	**2.482**	**2.510**	**2.763**	**2.974**	**3.104**	**3.236**
Total Liabilities	**3.895**	**3.520**	**3.357**	**3.498**	**3.959**	**4.125**	**4.504**	**4.831**	**5.037**	**5.247**
Equity										
Equity Owner	-25	325	779	1349	1481	1753	2069	2291	2494	2641
Non-controlling interests	6	5	5	5	6	6	6	6	6	6
Total Equity	**-19**	**330**	**784**	**1354**	**1487**	**1759**	**2075**	**2297**	**2500**	**2647**
Total Equity and Liabilities	**3875**	**3850**	**4141**	**4852**	**5446**	**5.885**	**6.579**	**7.128**	**7.537**	**7.894**

Appendix 15: Detailed Subdivision of Amortization & Depreciation Costs Analysis (2015-2019)

Elements (million euros)	2015	2016	2017	2018	2019
Depreciation PP&E	144,3	129,6	143,5	156,4	191,5
Externally acquired development costs	*84,9*	*77,2*	*73,0*	*83,4*	*103,8*
Development costs internally acquired	*30,0*	*26,8*	*27,5*	*31,8*	*35,8*
Patents Concessions and licenses	*11,1*	*11,6*	*14,3*	*14,9*	*18,7*
Other intangible assets	*2,7*	*2,4*	*2,3*	*2,3*	*2,2*
Total Amortization Intangible Assets	128,7	118,1	117,1	132,4	160,5
Total D&A	**272,9**	**247,7**	**260,6**	**288,7**	**351,9**

Appendix 16: Working Capital Requirements Forecasts

(million euros)	2015A	2016A	2017A	2018A	2019A	2020E	2021E	2022E	2023E	2024E
Operating Current Assets										
Trade Receivables	*158*	*244*	*239*	*211*	*231*	*254*	*281*	*303*	*317*	*331*
Receivables from Financing Activities	*1174*	*790*	*733*	*878*	*966*	*996*	*1100*	*1187*	*1240*	*1295*
Current Tax Receivables	*15*	*1*	*6*	*128*	*21*	*21*	*23*	*25*	*26*	*28*
Accounts Receivable	1347	1036	978	1218	1219	1272	1404	1515	1583	1653
Total Inventory	295	324	394	391	420	455	483	522	540	558
Deferred Tax Assets	123	119	94	61	74	72	80	86	90	94
Other Current Assets	46	54	45	64	93	70	77	83	87	90
Total Current Assets	**1812**	**1533**	**1512**	**1734**	**1806**	**1868**	**2044**	**2206**	**2300**	**2395**
Operating Current Liabilities										
Accounts Payable	508	615	608	654	712	761	809	856	885	916
Accrued Expenses	94	98	116	107	114	122	130	137	142	147
Customer Advances	442	503	442	417	624	611	675	728	761	794
Income Taxes Payable	125	42	29	8	7	17	18	19	20	20
Deferred Tax Liabilities	23	13	11	39	82	82	83	89	93	98
Other Payables	40	19	21	18	20	22	23	25	26	26
Total Current Liabilities	**1232**	**1289**	**1225**	**1243**	**1560**	**1615**	**1738**	**1855**	**1927**	**2001**
Working Capital	**580**	**243**	**287**	**492**	**246**	**253**	**307**	**352**	**373**	**394**
Net Change in WC		**337**	**-43**	**-205**	**246**	**-7**	**-53**	**-45**	**-21**	**-21**

(million euros)	2015A	2016A	2017A	2018A	2019A	2020E	2021E	2022E	2023E	2024E
Operating Current Assets Metrics										
Trade Receivables Outstanding Days	*20*	*29*	*26*	*23*	*22*	*24*	*24*	*24*	*24*	*24*
Rec. from Fin. Act. Outstanding Days	*150*	*93*	*78*	*94*	*94*	*94*	*94*	*94*	*94*	*94*
Current Tax Receivables	*2*	*0*	*1*	*14*	*2*	*2*	*2*	*2*	*2*	*2*
Days Sales Outstanding (DSO)	172	122	105	130	118	120	120	120	120	120
Days Sales Inventory (DSI)	80	82	96	98	96	98	98	100	100	100
Deferred Tax Assets (% of Sales)	4,3%	3,8%	2,8%	1,8%	2,0%	*1,9%*	*1,9%*	*1,9%*	*1,9%*	*1,9%*
Other Current Assets (% Sales)	1,6%	1,7%	1,3%	1,9%	2,5%	1,8%	1,8%	1,8%	1,8%	1,8%
Operating Current Liabilities Metrics										
Days Payable Outstanding (DPO)	138	156	149	165	163	164	164	164	164	164
Accrued Expenses (% of COGS)	7,0%	6,8%	7,7%	7,4%	7,2%	7,2%	7,2%	7,2%	7,2%	7,2%
Customer Advances (% of Sales)	15,5%	16,2%	12,9%	12,2%	16,6%	15,8%	15,8%	15,8%	15,8%	15,8%
Income Tax Payables (% of GOGS)	9,3%	2,9%	2,0%	0,5%	0,4%	1,0%	1,0%	1,0%	1,0%	1,0%
Deferred Tax Liabilities (% of Sales)	0,8%	0,4%	0,3%	1,1%	2,2%	*2,1%*	*1,9%*	*1,9%*	*1,9%*	*1,9%*
Other Payables (% of COGS)	3,0%	1,3%	1,4%	1,3%	1,3%	1,3%	1,3%	1,3%	1,3%	1,3%

Appendix 17: Covid-19 Scenario Analysis (Worst-Base-Best Case Scenarios)

	Worst Case Scenario			Base Case Scenario		Best Case Scenario	
Covid-19 Adjustment (% Decrease)	2020E	2021E	2022E	2020E	2021E	2020E	2021E
Cars and Spare Parts Revenues	-7,42%	-4,58%	-1,73%	-3,68%	-1,74%	-1,79%	-0,97%
Sponsorship, Commercial & Brand	-17,91%	-10,96%	-4,32%	-14,72%	-4,00%	-9,73%	-2,69%
COGS	-2,84%	-2,22%	-1,18%	-1,06%	-1,02%	-1,01%	-0,56%
Gross Profit	-12,49%	-7,39%	-2,59%	-7,86%	-2,65%	-4,08%	-1,59%
SG&A	-9,41%	-5,76%	-3,21%	-8,83%	-3,20%	-4,89%	-1,76%
R&D	-5,92%	-2,64%	-1,43%	-3,01%	-0,56%	-1,83%	-1,04%
EBITDA	-16,09%	-8,82%	-2,90%	-9,68%	-3,36%	-4,84%	-1,77%
D&A	-3,12%	-2,12%	-0,94%	-2,02%	-0,45%	-2,02%	-0,45%
EBIT	-20,92%	-11,41%	-4,45%	-12,53%	-4,49%	-5,88%	-2,28%
PP&E	*-2,73%*	*-1,48%*	*-0,79%*	*-1,16%*	*-0,34%*	*-0,86%*	*0,47%*
Capitalized R&D	*-2,53%*	*-1,27%*	*-0,47%*	*-3,01%*	*-0,56%*	*-1,83%*	*-1,04%*
Capex	-2,55%	-1,33%	-0,60%	-2,00%	-0,44%	-1,29%	-0,29%

Appendix 18: Cluster Analysis Data

Identifier (RIC)	Company Name	EV/EBIT	EBIT Margin %	Expected CAGR 20-22	ROIC	Minimum Distance	Ranking
RACE.MI	**Ferrari NV**	**31,73**	**24,3%**	**10,1%**	**20,6%**		
DAIGn.DE	Daimler AG	17,68	5,9%	8,8%	4,4%	4,99	12
FCHA.MI	Fiat Chrysler Automobiles NV	1,63	5,6%	5,8%	11,6%	6,21	17
F	Ford Motor Co	34,84	4,2%	12,1%	3,5%	4,23	10
GM	General Motors Co	17,26	4,8%	8,3%	5,6%	5,08	13
7267.T	Honda Motor Co Ltd	14,43	4,6%	0,6%	3,9%	6,32	18
BMWG.DE	Bayerische Motoren Werke AG	14,98	7,3%	5,5%	3,8%	5,52	15
7203.T	Toyota Motor Corp	14,4	8,2%	-0,6%	9,2%	5,55	16
VOWG_p.DE	Volkswagen AG	13,09	7,0%	6,3%	5,8%	5,46	14
HRMS.PA	Hermes International SCA	28,19	34,4%	12,3%	22,6%	1,79	1
SFER.MI	Salvatore Ferragamo SpA	16,12	11,2%	6,7%	10,9%	4,19	9
LVMH.PA	LVMH Moet Hennessy Louis Vuitton SE	17,35	21,2%	1,5%	12,3%	3,44	7
BRBY.L	Burberry Group PLC	12,32	16,6%	2,4%	17,7%	3,78	8
MONC.MI	Moncler SpA	17,26	30,2%	12,4%	25,4%	2,75	4
CFR.S	Compagnie Financiere Richemont SA	14,46	14,0%	3,2%	9,3%	4,58	11
BCU.MI	Brunello Cucinelli SpA	29,13	13,9%	11,1%	14,6%	1,99	3
1913.HK	Prada SpA	32,88	9,9%	8,1%	22,1%	1,91	2
PRTP.PA	Kering SA	13,59	30,1%	10,6%	12,5%	3,25	6
ESLX.PA	EssilorLuxottica SA	32,12	9,5%	9,4%	6,6%	2,99	5

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