10/10 Great job!

Ferrari: The 2015 Initial Public Offering (Group 2)

Introduction

Before Sep 2014, Ferrari, under the leadership of Montezemolo, adhered to a strategy of limiting production volumes to foster a sense of exclusivity. However, after Montezemolo's departure, Marchionne, as the new chairman, proceeded to boost sales, especially in China and the Middle East, while continuing to restrict volumes in Europe and the Americas. This adjustment raised concerns about whether Ferrari could maintain its exclusive brand image while increasing sales volumes. Challenges occurred to be able to convince potential investors that the company aggressively produced more cars for these places which would not decrease the brand image.

Fiat Chrysler Automobiles NV (FCA), Ferrari's parent company, announced that Ferrari will be listed on the NYSE and traded separately from FCA. It set an initial price range of USD 48 to USD 52 per share in early Oct 2015, though the final share pricing remained undecided. The price needed to reflect how strong and profitable Ferrari is, and to show the expected growth potential by new strategies towards market expansion. On the other hand, setting the price too high would communicate mispricing, pushing potential investors away. They would be skeptical about the company's growth and not be exclusive anymore. In contrast, underpricing could miss out on money that funded future growth. The IPO occurred when the global economy and the automotive market were unstable. The company needed to ensure potential investors' confidence through a strong business model, and how it can outperform other automotive companies. Good summary.

Determining Ferrari's share price

To determine Ferrari's share price, we use two approaches: DCF and multiple valuations.

1. DCF valuation

We employ DCF methodology as illustrated in **Exhibit 3**. Additionally, we have extended our forecast to include 2020, aiming to better match capital expenditures (CAPEX) with depreciation expenses before the terminal year, ensuring forecasting reflects a steady state of operations **(Exhibit 2)**. The 2020 figures are calculated based on given assumptions for 2019. For 2015 to 2019, the calculation begins with an assessment of EBIT, which is segmented into three categories: cars & spare parts, engines, and other revenue streams. The computation of EBIT for these segments is based on the projected growth rates in revenue and projected operating profit margins. The calculated EBIT is then subjected to the Italian corporate tax rate of 38%. We maintain a constant rate for depreciation and amortization expenses, equivalent to the given rate at 33.98% of the net value of PPE and intangible assets. The variation in net working capital is determined by analyzing the annual changes in current assets and liabilities. CAPEX streams are estimated based on the given rates. The firm's free cash flow is discounted using a cost of capital rate of 5%. A terminal growth rate of 2% is applied to calculate the terminal value. Net debt is computed by deducting cash and cash equivalents from the total interest-bearing debt, referencing the balance as of the first half of 2015. With a total of 189 million euros in shares, the share price is subsequently calculated as EUR 46.59 and converted into US dollars at an exchange rate of 1.1375. So, the price from DCF valuation is USD 53.0.

For assumptions used in the financial projection and the DCF figures, please refer to **Exhibit 1** and **Exhibit 3**, respectively.

2. Multiple valuations

First of all, we identify peers with business operations most closely resembling those of Ferrari. In this context, we select companies within the premium segment of the automotive industry as well as luxury goods companies given their similar business models **(Exhibit 4)**. Subsequently, we project each peer's EBITDA using their respective projected growth rates. Then, we obtain a mean and median projected EV/EBITDA of 9.82x and 8.93x, respectively. Under this circumstance, we use the median EV/EBITDA to avoid the effect of extreme values. Thus, by assuming that its net debt remains constant at EUR 2,009.4 million, the same number as in the first half of 2015, we multiply Ferrari's projected EBITDA in 2015 of EUR 763.3 million to a multiple of 8.93x and obtain a share price on 20 Oct 2015 of EUR 25.1 and USD 28.5.

Analysis

Ferrari's share price from DCF and multiple valuations are shown in **Exhibits 3 and 4**. Applying DCF allows us to focus on the intrinsic value of a company based on its future cash flows, providing a direct assessment of its financial health and profitability. Moreover, it allows for a detailed analysis of a company's fundamentals, including revenue growth, margins, CAPEX, and working capital requirements. However, there are some disadvantages as it does not consider the performance of similar companies and also assumes that Ferrari will continue profiting which cannot be guaranteed because there is always risk involved in the future of the company. Besides, assuming a constant capital structure, particularly applying the debt amount transferred from FCA, could lead to an inaccurate valuation.

In addition, we conduct a sensitivity analysis on the share price derived from the DCF approach. **Exhibit 5** reveals that the share price is highly sensitive to changes in the cost of capital. This implies that if a firm's EBIT stream becomes more volatile due to a new strategy, the resulting higher cost of capital could lead to a reduction in the share price. This analysis underscores the importance of carefully considering the impact of strategic decisions on financial stability and investor perceptions, as fluctuations in the cost of capital directly influence the valuation of the company's shares.

Another method for share price calculation is multiple valuation. This method is simpler because it uses fewer assumptions and calculations. Also, it facilitates direct comparison with peers and industry standards, offering a market-relative valuation. Nonetheless, there is no direct peer to compare to Ferrari and it has changed its strategy to increase the sales volume. Thus, even if we use luxury brands as our peers, it may not be suitable if the margin of the firm changes.

Multiple also contains growth opportunity.

Recommendation

After assessing both the advantages and disadvantages of each method, the DCF method emerged as the initially preferred approach over multiple valuations. However, to determine the most appropriate IPO price, we engaged in a football field analysis, as illustrated in **Exhibit 7**. This analysis demonstrates that the multiple valuation method yields a significantly broader price range, from USD 3.00 to USD 85.5, compared to the narrower range derived from the DCF method, which is approximately USD 43.7 to USD 63.7. The price range of DCF came from adding and subtracting the sales growth and EBIT margin of cars and spare parts by 1% **(Exhibit 6)**. Additionally, we have computed specific prices for DCF and multiple valuations, presented in **Exhibits 3 and 4**, respectively.

Besides the multiple valuations approach offering a wider range of prices, the specific price provided by this method is much lower than the IPO price range set by FCA. Consequently, we propose that an IPO price determined by DCF, estimated at USD 53.0, represents a more accurate and preferable valuation.

Appendix

Exhibit 1: Given assumptions on Ferrari's forecast

Ferrari Forecast (Millions of Euro, except as noted)							
Assumptions	2014	2015	2016	2017	2018	2019	2020
Growth in Cars Shipped	3.6%	7.0%	5.0%	4.0%	4.0%	3.0%	
Growth in Revenue/Car		5.0%	5.0%	5.0%	5.0%	5.0%	
Growth in Engine Revenue		3.0%	3.0%	3.0%	3.0%	3.0%	
Growth in Other Revenue		3.0%	6.0%	6.0%	6.0%	6.0%	
Growth in total revenue	18.3%	9.6%	8.7%	8.0%	8.1%	7.3%	2.0%
Operating Margin - Cars	12.5%	13.0%	13.5%	14.0%	14.0%	14.0%	
Operating Margin - Engines	9.1%	10.0%	10.0%	10.0%	10.0%	10.0%	
Operating Margin - All Other Revenue	24.9%	25.0%	27.0%	28.0%	30.0%	30.0%	
Operating Margin - Total	14.4%	14.8%	15.4%	15.9%	16.2%	16.2%	16.2%
Net Working Capital Turnover	1.9	2.0	2.1	2.2	2.2	2.2	2.2
Net Fixed Asset Turnover	3.2	3.2	3.3	3.5	3.7	3.8	3.8
Deprec. & Amort./PP&E	34%	34%	34%	34%	34%	34%	0.3
Financial Forecast							
Car Shipments (000s)	7.26	7.76	8.15	8.48	8.82	9.08	
Avg Revenue per Car (Euro 000s)	268	281	295	310	326	342	
Car Revenue	1,944	2,184	2,408	2,629	2,871	3,105	
Engine Revenue	311	320	330	340	350	361	
All Other Revenue	507	523	554	587	623	660	
Total Revenue	2,762	3,027	3,292	3,556	3,844	4,126	4,208
Operating Profit - Cars	243	284	325	368	402	435	
Operating Profit - Engines	28	32	33	34	35	36	
Operating Profit - All Other Revenue	126	131	150	164	187	198	
Total Operating Profit	398	447	508	567	624	669	682
Net Working Capital	1,425	1,513	1,568	1,617	1,747	1,875	1,913
Net PP&E and Int. Assets	851	932	998	1,016	1,039	1,086	1,107
Deprec. & Amort.	289	317	339	345	353	369	376
Total Revenue Growth	18%	10%	9%	8%	8%	7%	2%
EBITDA Margin	25%	25%	26%	26%	25%	25%	25%

Note: We use terminal growth of 2% for sales growth in 2020 and use other assumptions from 2019 for 2020.

Exhibit 2: Ferrari's CAPEX and depreciation and amortization expenses

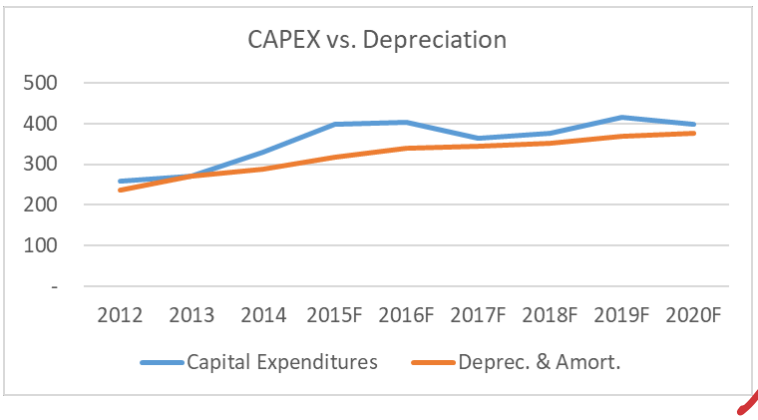


Exhibit 3: Discount Cash Flow (DCF) Valuation of Ferrari

Ferrari case DCF valuation Unit: Millions of Euro, except as noted		2015	2016	2017	2018	2019	2020	Terminal value
Valuation date	20-Oct-15	0.20	1.20	2.20	3.20	4.20	5.20	5.20
EBIT		446.62	507.64	566.52	623.72	668.74	682.11	
EBIT*tax		(169.71)	(192.90)	(215.28)	(237.01)	(254.12)	(259.20)	
EBIT after tax		276.90	314.73	351.24	386.71	414.62	422.91	
Depreciation and amortazition expense		316.66	338.93	345.26	352.98	368.89	376.27	
Net working capital changes		(88.48)	(54.03)	(49.04)	(130.60)	(128.11)	(37.51)	
CAPEX		(398.13)	(404.47)	(363.87)	(375.71)	(415.72)	(397.98)	
FCFF		106.95	195.16	283.59	233.38	239.67	363.69	12,365.49
PV of FCFF		105.92	184.06	254.72	199.65	195.27	282.16	9,593.32
Firm value		10,815.10						
Less: Net debt		(2,009.40)	using 1H15					
Equity value		8,805.70						
No. of shares (in million)		189.00						
Share price (in Euro)		**46.59**						
Exchange Rate (USD/EUR)		1.1375						
Share price (in US dollar)		**53.00**						
Cost of capital	5%							
Terminal growth	2%							

Exhibit 4: Ferrari's peers and calculation of share price from EV/EBITDA multiple

	Total Revenue	Capital Expend	EBITDA	EBITDA margin	Projected Growth Rate	Market Value of Equity	Total Debt	Debt-to-equity ratio	Cash	Enterprise Value	Projected EBITDA (2015)	Forward EV/EBITDA
Auto Manufacturers												
BMW	80,401	6,099	16,426	20.43%	6.10%	56,562	77,506	137.03%	7,688	126,380	17,428	7.25
Daimler	129,872	6,307	18,514	14.26%	6.90%	77,906	86,689	111.27%	15,543	149,052	19,791	7.53
Fiat Chrysler	96,090	8,121	8,271	8.61%	4.60%	18,657	33,724	180.76%	23,601	28,780	8,651	3.33
Volkswagen	202,458	16,613	23,048	11.38%	3.50%	52,916	139,021	262.72%	34,143	157,794	23,855	6.61
Luxury Brands												
Burberry Group	3,221	199	745	23.13%	2.60%	7,691	90	1.17%	865	6,916	765	9.05
Cie Financiere Richemont	10,410	708	2,902	27.88%	3.10%	38,986	3,093	7.93%	8,553	33,526	2,992	11.21
Hermes International	4,119	279	1,478	35.88%	6.80%	35,297	41	0.12%	1,481	33,857	1,578	21.45
LVMH Moet Hennessy	30,638	1,848	7,027	22.94%	2.10%	80,731	9,243	11.45%	4,648	85,326	7,175	11.89
Prada	3,552	362	954	26.87%	1.90%	8,772	519	5.91%	720	8,571	972	8.81
Tiffany & Co.	3,248	189	819	25.20%	4.70%	9,125	989	10.84%	648	9,467	857	11.04
Mean	56,401	4,072	8,018	21.66%	4.23%	38,664	35,092	72.92%	9,789	63,967	8,406.42	9.82
Median	20,524	1,278	4,965	23.03%	4.05%	37,142	6,168	11.15%	6,168	33,692	5,083.26	8.93
Max	202,458	16,613	23,048	35.88%	6.90%	80,731	139,021	262.72%	34,143	157,794	23,854.68	21.45
Min	3,221	189	745	8.61%	1.90%	7,691	41	0.12%	648	6,916	764.50	3.33

	2015 forward
Median EV/EBITDA	8.93
Ferrari EBITDA	763.28
Enterprise value	6,816.54
Enterprise value on 20 Oct 2015	6,751.25
Less: Net debt	2,009.40
Equity value	4,741.85
No. of shares (in million)	189.00
Share price (in Euro)	25.09
Exchange Rate (USD/EUR)	1.1375
Share price (in US dollar)	**28.54**

Exhibit 5: Sensitivity analysis of the cost of capital and terminal growth (price unit: USD)

		Terminal growth			
	53.00	0%	1%	2%	3%
Cost of capital	4.00%	46.60	59.90	86.51	166.32
	5.00%	34.22	41.26	53.00	76.47
	6.00%	25.99	30.10	36.27	46.55
	7.00%	20.14	22.69	26.25	31.61
	8.00%	15.77	17.41	19.59	22.66
	9.00%	12.38	13.46	14.85	16.70

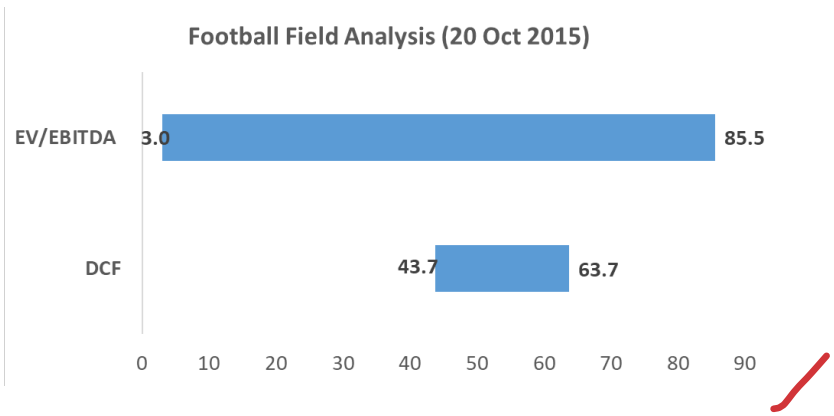
Exhibit 6: Sensitivity analysis of cars' revenue growth and EBIT margin (price unit: USD)

Base Case	USD		Revenue Growth - Cars and Spare Parts				
			More Pessimistic	Pessimistic	Base Case	Optimistic	More Optimistic
		53.00	1	2	3	4	5
EBIT Margin - Cars and Spare Parts	More Pessimistic	1	43.72	44.69	45.70	46.74	47.82
	Pessimistic	2	47.07	48.19	49.35	50.55	51.80
	Base Case	3	50.41	51.68	53.00	54.36	55.78
	Optimistic	4	53.75	55.17	56.65	58.17	59.75
	More Optimistic	5	57.10	58.67	60.29	61.98	63.73

Note: We compute each case by adding or subtracting 1% from the base case.

Exhibit 7: Summary of valuation and football field analysis

Multiples					
Multiples		**Max**	**Min**	**Mean**	**Median**
Forward EV/EBITDA		21.45 x	3.33 x	9.82 x	8.93 x
Denominators		**2015F**			
EBITDA	*EUR MM*	763.28			
Net debt	*EUR MM*	2,009.40			
No. of shares	*shares MM*	189.00			
Target Price (USD) - 20 Oct 2015		**Max**	**Min**	**Mean**	**Median**
DCF	*EUR*	56.0	38.4	46.6	46.6
EV/EBITDA multiple	*EUR*	75.2	2.7	28.6	25.1
Target Price (USD) - 20 Oct 2015		**Max**	**Min**	**Mean**	**Median**
DCF	*USD*	63.7	43.7	**53.0**	**53.0**
EV/EBITDA multiple	*USD*	85.5	3.0	32.6	28.5



Note: We assume that the Exchange Rate (USD/EUR) = 1.1375