

Ferrari: “e-building” project evaluation

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1. Company Background information

Ferrari N.V., headquartered in Maranello, Italy, is a distinguished name in luxury sports cars and motorsport racing. As detailed in their 2023 annual report, Ferrari has demonstrated robust financial performance with a net profit increase of 34%, surpassing the €1 billion mark. Their annual EBITDA margin impressively rose to 38.2%.

Ferrari is deeply committed to innovation, as reflected in the launch of groundbreaking models such as the Roma Spider, SF90 XX Stradale, and SF90 XX Spider in 2023. These models exemplify Ferrari’s push towards integrating advanced technology with its legendary design. The company is equally focused on sustainability, aiming for carbon neutrality by 2030. This commitment is supported by significant strides in reducing direct emissions and developing sustainable technologies, including a prototype engine made from recycled aluminum and additional solar energy capacity. Culturally, Ferrari fosters a strong sense of community through events that connect enthusiasts and clients worldwide, underscoring the brand's legacy and luxury status. As a publicly traded entity on the New York Stock Exchange under the ticker symbol RACE, Ferrari continues to captivate global audiences and shareholders alike with its blend of tradition, innovation, and racing prowess.

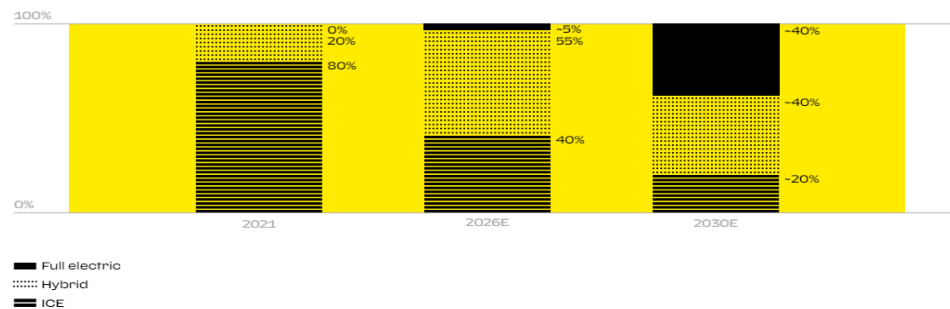
2. Case introduction

Ferrari's decision to establish a new production facility in 2024, named "e-building", specifically for the manufacturing of electric vehicles (EVs), underpins their strategic commitment towards embracing sustainable mobility. The project is set to begin with an initial investment of €197 million (1), allocating €5 million for land, €29,550 million for the industrial building, and €162,450 million for plant, machinery, and equipment (2). This move aligns with the global automotive industry's shift towards electrification.

The depreciation of these assets is structured with a 12% annual rate for the building and a 14% rate for equipment (3). This leads to varying annual depreciation expenses that start from €26,289 million in the initial years and eventually decrease as the assets age. From a production standpoint, fixed costs are anticipated to be around €5 million annually starting from 2025 (2), coinciding with the commencement of production activities. The cost of raw materials per unit is estimated at €60.000 (2), with half of this cost expected to be paid in cash.

	Depreciation rates
Industrial buildings	3% - 20%
Plant, machinery and equipment	5% - 22%
Other assets	12% - 25%

In terms of production output, Ferrari aims to progressively increase its production from 600 units in 2025 to 4.800 units by 2029 (4). On the marketing front, Ferrari plans for an initial sale of 500 units in 2025, scaling up to 4,500 units by 2029, each sold at a price of €200.000 (2).



Marketing efforts will also incur fixed costs of €3 million annually.

The financing of the project is strategically planned with a debt-to-equity ratio of 1.66 (5), with 62% of the funds financed through debt at an interest rate of 5%, reflective of a riskless rate of 3.7%. The project falls under a corporate tax regime of 24%.

This bold move by Ferrari not only reinforces its role as a leader in the luxury automotive sector but also positions it as a forward-thinking player in the shift towards electric vehicles. The financial strategy and projected production increases underline Ferrari's commitment to expanding its market reach while adapting to the evolving environmental standards and consumer preferences towards eco-friendly transportation solutions. The success of the "e-building" project will significantly depend on Ferrari's ability to manage these operational and financial complexities effectively.

3. Case questions

1. Compute ROE, ROCE, EVA, MVA, NPV and IRR. Is this a good project?

Despite a difficult start, marked by negative ROE, ROCE, and EVA values, the project shows significant signs of improvement and robust growth in subsequent periods. The ability to generate positive EVA and substantial MVA indicates that the project is outperforming its cost of capital and creating value efficiently. The robustness of IRR and NPV further confirms that the project is financially beneficial and sustainable in the long term. Therefore, based on these indicators, the project can be considered a good investment.

2. How much can volumes decrease such that NPV = 0

Upon manually computing the NPV of the project, it emerged that a decrease in average sales by 40% brings the NPV close to zero (NPV = 2, IRR = 17%)

	2024	2025	2026	2027	2028	2029
Sales quantity	300	1.200	2.000	3.000	2.800	2.967
Delta Sales - Production quantity	-100,00%	-20,00%	-14,00%	-4,00%	-45,71%	-61,78%
% Sales paid in cash	40,00%	40,00%	40,00%	40,00%	40,00%	40,00%
Selling Price (\$)	200	200	200	200	200	200
Marketing Fixed Cost	3.000	3.000	3.000	3.000	3.000	3.000

3. Show 2 alternative scenarios with D/E ratio of 0 and 2.

By varying the D/E ratio, we notice a change in ROE, EVA, and MVA; in particular, with a D/E ratio = 0, ROE cannot be calculated because equity is zero, implying that there are no shareholders to report gains or losses to. EVA follows a similar path to the starting scenario, confirming that it is more sensitive to operations than to capital structure. MVA is positive, although not as high as in the starting case. This illustrates that the company has been able to create value without resorting to debt. However, the value created is lower, which may reflect a lower ability to take advantage of riskier but potentially more profitable investment opportunities.

With a D/E ratio = 2, ROE grows even more significantly than in the first table, showing extraordinarily high gains toward the end of the period. This indicates an even more pronounced effect of leverage, with returns amplifying due to the increased use of debt. EVA improves further over the other two tables, suggesting that the firm is generating value well above its cost of capital, which now includes a higher interest burden due to higher debt. The final MVA is still higher than in the other two scenarios, showing that an additional increase in debt has allowed value creation to amplify even more. This is consistent with the idea that higher leverage can significantly increase economic returns, provided the company can successfully manage the associated financial risk and effectively capitalize on high-yield projects.

4. Let's assume we are an investor who, after analyzing forecasts on the "e-building" project, decides to buy RACE shares through an US option call: at what price should he buy it?
5. We look at the value of RACE stock in 2019 (the year when construction of the new plant begins) and construct a binomial tree for a stock price. Based on the data that have emerged in recent years, comment on the difference we have obtained between the actual data and the forecast made in 2019.

Using the binomial tree model in 2019, the forecasts indicate that in the best-case scenario, Ferrari's stock price in 2029 will be \$473.83 per share. However, in 2023, the model offers a significantly lower value (\$247.2 per share) compared to the actual realized value (\$336.27 per share). This notable difference could be attributed to macroeconomic factors such as the pandemic and high inflation, along with increasing profits over the years.

Another factor that may have influenced this is the company's strong commitment to renovating its production facilities, particularly the "e-building" project, which could have positively impacted the company's overall value, resulting in an increase in the stock price.

4. References

1. Annual report 2023

https://cdn.ferrari.com/cms/network/media/pdf/Ferrari-2023-annual-report-april-17-2024.pdf?_gl=1*5ryq8u*_ga*MTYyNzY3MzE2Ni4xNzE0MTI2MDY0*_ga_JM1HT9B412*_MTcxNDY1NjU3Ni44LjEuMTcxNDY1NjU4Ny4wLjAuMA