Hyperion

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The Hyperion company operates in the software industry and specializes in educational software for all levels: teaching aids, serious games, classroom interaction etc.

The company's CEO, who joined it 10 years ago when it was merely a small promising startup, wants to invest in a new project, related to the development of mass online education. The competition is quite tough in this sector, but he believes that the tools they developed in the past would allow them to propose innovative products faster than their competitors.

The project would entail the creation of a new division, dedicated to the market of MOOCs (massive open online courses). To make room for it, Hyperion would rent an additional floor in the building where it is currently located: another company recently moved and the last floor of the building is empty. Renting it would cost 60,000 euros per year. Of course all the offices should be refurbished and equiped, the total cost is estimated to 200,000 euros and would be depreciated straight line to zero over 4 years.

To start the new project the company will hire 3 engineers and equip them with the necessary development platforms (laptops etc.). The cost of the equipment is estimated to 30,000 euros, and these would be depreciated over 4 years too, using the straight line to zero method as well. It is estimated that this equipment might be sold for 10% of its inital value to brokers in the end of year 4. The total wages of the new staff are estimated to 300,000 euros per year.

The other costs include variable costs (mainly the costs of hosting the services in the cloud) estimated to 10% of the sales, and fixed costs which would amount to 100,000 euros per year. The project duration will be 4 years. The working capital requirements would be negligible.

Hyperion is not listed yet, it was established on private funding, and venture capitalists entered the capital five years ago. One of Hyperion main competitors, Teachera Ltd, is listed on the Alternext market. It is a valid candidate to serve as a "similar company" for financial calculations, as it has a very close activity and roughly the same size.

Teachera's beta is 1.6 and its stock price is 36 euros. There are 1,000,000 stocks outstanding. Four years ago, Teachera issued 250,000 bonds of 100 euros face value, with a 5.7% coupon rate. The bonds will mature in 6 years from now, and will be repaid at par. Their YTM these days is 6.1%. Teachera does not have any other long term debt.

Hyperion's debt ratio is 0.2. It can borrow from its bank at 6.4% per year. Moreover, the expected rate of return of the market was 12.60% this year, and the risk free rate is 3.90%. The corporate tax rate is 1/3 for both companies, and you can assume that they are profitable and pay taxes.

Questions

1. What is Teachera's bond price (2 decimal places)?
2. What is Teachera's debt market value (in euros, no decimal places)?
3. What is Teachera's leverage (in %, 2 decimal places)?
4. What is the unlevered beta of Teachera and Hyperion (4 decimal places)?
5. What is Hyperion's beta (4 decimal places)?
6. What is Hyperion's cost of equity (in %, 2 decimal places)?
7. What is Hyperion cost of debt (in %, 2 decimal places)?

8. What is the required rate of return on the project (in %, 2 decimal places)?
9. What would be the divestment cash flow in year 4 (in euros, no decimal places)?
10. What would be the annual operating cash flow for sales of 600,000 euros every year? (in euros, no decimal places)
11. What would then be the project's NPV? (in euros, no decimal places)
12. What should be the necessary operating cash flow for years 1 to 4 to get a zero NPV (in euros, no decimal places)?
13. What is the necessary level of sales every year to get the cash flow you calculated in the previous question (in euros, no decimal places)?
14. Hyperion will borrow 350,000 euros over 5 years to finance the project. The loan will be repaid by constant annuities at a 6.4% interest rate. Calculate the constant annuity (in euros, 2 decimal places).