University of Stavanger (UiS)

Exam MØA 370 Valuation

Fall 2018.

Permitted Material: Calculator

The number in brackets is the points for each problem. The points sum to 100.

Exercise 1. *Company-wide cost of Capital* [5]

Explain whether each of the following projects is likely to have risk similar to the average risk of the firm.

1. Google, Inc., plans to purchase real estate to expand its headquarters.
2. Target Corporation decides to expand the number of stores it has in the southeastern United States.
3. GE decides to open a new Universal Studios theme park in China.

Exercise 2. *Ratios* [5]

1. Parry Electronics is a regional electronics wholesaler and distributor which earned $1,250,000 in EBITDA this year based on revenues of $4,000,000. The enterprise values of publicly traded firms that operate in the same industry currently are valued at 5-6 times their current EBITDA. What is your estimate of the enterprise value of Parry Electronics?

   If Parry is small relative to the size of the comparison firms with assets only one-tenth the size of the largest firm in the industry, how would this influence your valuation estimate? Explain.
2. In the tech sector, the price of an IPO is often stated as a multiple of its sales, which is then compared to the price/sales ratio of comparable firms. Why do you think that analysts use price/sales ratios in this setting rather than price/earnings ratios?

Exercise 3. *Short Answer Questions* [10]

1. A *sensitivity analysis* is a common part of a valuation.
   (a) How do one typically carry out a sensitivity analysis in valuation settings?
   (b) What is the purpose of a sensitivity analysis?
   (c) What are common factors that one will investigate the sensitivity to?
2. When do one use *scenarios* in valuations?
3. What is an The Adjusted Present Value Method, and under what circumstances will one use this valuation method.
4. What is the Gordon Growth Model?
5. Mango Services Company has a corporate WACC of 10%. You propose investing in a new project that has very little risk with an internal rate of return (IRR) of 8%. Your boss asks, “How can the project possibly have a positive NPV if its IRR is less than our WACC?” What is your answer?

6. A typical valuation involves forecasting cash flows, where the following steps are mentioned.

   (a) Perform an analysis of the firm's most recent financial statements.

   (b) Construct pro-forma financial statements for a three- to five-year planning period.

   (c) Convert pro-forma financial statement forecasts to predictions of the firm's free cash flow from operations and free cash flow from nonoperating income

   (d) Forecast the value of cash flows after the end of the planning period using a terminal value.

   One of the important choices here is the number of years you use in the planning period (in the example three- to five-years). This is typically called the planning *horizon*. What influences the choice of horizon in such valuations?

7. What is the most common source of *goodwill* in a corporation's balance sheet?

8. A common usage of relative valuation is valuing real estate, be it commercial or residental. Why can real estate be argued to be particularly suited for relative valuation?

9. Suppose a firm's most recent account has a negative EBIT. How does this affect a valuation based on Value/EBIT ratios?

Exercise 4. *Goodyear* [10]

Suppose Goodyear Tire and Rubber Company is considering divesting one of its manufacturing plants. The plant is expected to generate free cash flows of $1.5 million per year, growing at a rate of 2.5% per year. Goodyear has an equity cost of capital of 8.5%, a debt cost of capital of 7%, a marginal corporate tax rate of 35%, and a debt-equity ratio of 2.6. If the plant has average risk and Goodyear plans to maintain a constant debt-equity ratio, what after-tax amount must it receive for the plant for the divestiture to be profitable?

Exercise 5. *Beta estimation* [10]

You have been asked to estimate the beta of a high-technology firm which has three divisions with the following characteristics

Division	Beta	Market value
Personal Computers	1.60	$100 million
Software	2.00	$150 million
Computer Mainframes	1.20	$250 million

1. What is the beta of the firm?

2. What would happen to the beta of the equity if the firm divested itself of its software business?

3. If you were asked to value the software business for the divestiture, which beta would you use in your valuation?

Exercise 6. *Prokter and Gramble* [10]

Prokter and Gramble (PG) has historically maintained a debt-equity ratio of approximately 0.20. Its current stock price is $50 per share, with 2.5 billion shares outstanding. The firm enjoys very stable demand for its products, and consequently it has a low equity beta of 0.50 and can borrow at 4.20%, just 20 basis points over the risk free rate of 4%. The expected return on the market is 10%, and PG's tax rate is 35%.

1. This year, PG is expected to have free cash flows of \$6.0 billion. What constant expected growth rate of free cash flow is consistent with its current stock price?

Exercise 7. *Markum* [10]

You are a consultant who was hired to evaluate a new product line for Markum Enterprises. The upfront investment required to launch the product line is \$10 million. The product will generate free cash flow of \$750,000 the first year, and this free cash flow is expected to grow at a rate of 4% per year. Markum has an equity cost of capital of 11.3%, a debt cost of capital of 5%, and a tax rate of 35%. Markum maintains a debt-equity ratio of 0.40.

1. What is the NPV of the new product line (including any tax shields from leverage)?

2. How much debt will Markum initially take on as a result of launching this product line?

3. How much of the product line's value is attributable to the present value of interest tax shields?

Exercise 8. *Spotify* [40]

In class we looked at the listing of Spotify at the NYSE.

1. What was special about the Spotify listing relative to a regular IPO?

2. In class we looked at a discounted cash flow valuation of the case. The main parts of the valuation we covered in class is enclosed.

   As you know, a common alternative to a DCF analysis is a ratio analysis. Included you will find excerpts of the exhibits in the Spotify case. Use the information provided to evaluate the stock price of Spotify using a ratio approach.