ACST6003-Principles of Finance S1, 2022

Corporate Valuation Report

Due Date and Time:

Monday 9 May 2022 at 5pm (Sydney date/time)

Instructions – Read Carefully Before Attempting the Assignment

The file acst6003-assignment.xlsx contains all relevant information to perform analysis using financial models. Each worksheet in the file is named after a question which you need to answer, e.g., answer questions 1, 2, 3, 4 in worksheet Q1, Q2, Q3 and Q4. Each question should be answered in one worksheet. Scroll up/down and left/right of each question worksheet to find any subparts of each question which you need to answer. When presenting your final answer round off numbers to 2 decimal places but do not round off in intermediate calculations i.e., use whole numbers (not rounded off) in subsequent or intermediate computations, unless a question state otherwise. If a question requires comments, then present your comment below the questions answer.

Submission detail: You only need to submit one single file via **Turnit-It-In (Excel)**. The submission link will be available on 5th May week 9 of the semester.

- **Do not change any information or formatting in the excel file "acst6003-report.upload" file.**
- **Do not use appendices, all relevant answers and analysis output should be presented in Excel. Appendices will not be marked.**
- **The report comprised of total number of 11 questions with sub-sections. You must address each of the questions (i.e., Q1, Q2, Q3, and Q4) of the report.**
- **Not adhering to the above will results in a penalisation of marks. This includes a 10% penalty per page over the limit. A critical thinking skill is about making informed decisions and good judgement about the information that is relevant and can be presented in an efficient and effective way.**
- **Instances of plagiarism will be dealt with according to the relevant policies and procedures.**
- **Total marks: 30 (Note the assignment is 20% of your overall assessment).**

All questions about the report must be via the iLearn page "General discussion forum"

ACST6003 – Corporate Valuation Report

You have been appointed as an Intern for a Consulting company headquartered in Sydney CBD. As part of your role in the area of Financial Valuation team, you have been assigned to examine three companies: Woolworth Limited (WOL), Woodside Petroleum Limited (WPL) and CSL limited (CSL) performance. Your research team has extracted the raw price data and dividend data of the companies from https://finance.yahoo.com website. Your role requires you to use research, analysis, application of financial models to prepare a valuation report. Your supervisor has given you a set of questions to assist financial valuation team to prepare the report with data description as shown below.

Data Description

Excel file "PART A-acst6003-assignment.xlsx" contains the following worksheet:

- A worksheet name "Price_WOL" for the period 2005 – 2021.
- A worksheet name "Price_WPL" for the period 2005 – 2021.
- A worksheet name "Price_CSL" for the period 2005 – 2021.
- A worksheet name "Div data" for the period 2005 – 2021.
- Annual yields on 30-day Treasury bill rate (worksheet name "price data")
- ASX 200 Index (worksheet name "price data")

For the purposes of this report, when you look at the prices of all companies only consider the data column "Adj Close price".

List of Tasks

Q1A. Your research team recommends calculating the annual growth rate in dividend for all three shares using the formula $\left(g_t = \frac{D_t}{D_{t-1}} - 1 \right)$. Also compute the average of the annual growth in dividend for the entire 16 years to complete the blank table provided in worksheet "Q1". **(2.5 marks)**

Q1B. Compute the monthly returns for the ASX200 Index (R_m), WOL (R_{WOL}), WPL(R_{WPL}) & CSL(R_{CSL})using the following formula $R_t = 100 \times \left(\frac{P_t}{P_{t-1}} - 1 \right)$. You are also required to compute a monthly 30-day Treasury-bill (T-bill) rate as follows: $R_{rf} = \frac{R_{annual}}{12}$. **(2 marks)**

Q1C. Compute $E(R)$ and standard deviation for all four returns series over the 01/02/2005 - 1/12/2021 time period. You are also required to compute the sharp ratio for WOL, WPL, CSL & market index. Comment on your analysis. **(4 marks)**

Q2A. Compute excess returns for the market, (i.e.,$R^e_{ASX200} = R_{ASX200} - R_{rf}$, where R_{ASX200} is the return on the market, and R_{rf} represents the monthly return on the 30-day T-bill rate. Also compute excess return for WOL, WPL and CSL as follows $R^e_{WOL} = R_{WOL} - R_{rf}$, $R^e_{WPL} = R_{WPL} - R_{rf}$ and $R^e_{CSL} = R_{CSL} - R_{rf}$ **(2 marks)**

Q2B. Using CAPM formula stated below run the regression model for WOL, WPL and CAL. Comment on systematic risk parameter of the regression output. **(2 marks)**

$$E(R_{WOL}) = R_{rf} + \beta_{WOL}\big(E(R_{ASX200}) - R_{rf}\big)$$
$$E(R_{WPL}) = R_{rf} + \beta_{WPL}\big(E(R_{ASX200}) - R_{rf}\big)$$
$$E(R_{CSL}) = R_{rf} + \beta_{CSL}\big(E(R_{ASX200}) - R_{rf}\big)$$

Where:

- R_{rf} is the average of the monthly risk free rate
- $E(R_{ASX200})$ is the average of the market return

Q2C. Plot the excess returns of each company against ASX200 market index in three different scatter plots with best fitted line and equation. **(3 marks)**

Q3A. Compute the expected returns for the three companies using CAPM formula. Comment on which share you should buy or sell and provide justification (**3 marks**)

Q3B. Compute the effective annualised return of the three companies (i.e., WOL, WPL and CSL). **(1.5 marks)**

Q3C. Calculate the share price of the WOL and WPL at time 2021 if the average of the annual growth in dividend is expected to grow at constant rate specified in Q1A from 2022 onwards infinitely. Your financial analyst team expect the average of the annual growth in dividend to decline at constant rate for CSL from 2022 onwards indefinitely. Compute the share price of CSL at time 2021. You should use the dividend in 2021 to complete this task. Show all working. Round up final answer to the nearest dollar. **(3 marks)**

Q4A. Assume all the three shares are normally distributed and the returns and standard deviation are as follows:

Shares	Returns	Standard deviation
WOL	80	5
WPL	65	8
CSL	98	6

Compute the range of possible returns for the three investments with 95 percent certainty if you consider all three shares for investment purpose. Show all working using formula. Comment on the results. **(4 marks)**

Q4B. Your friend Ella-Rose wishes to invest 50%, 30% and 20% of her overall wealth in each of the three shares WOL, WPL and CSL respectively. Explain in plain and/or technical language using formula how you would calculate her portfolio expected return and standard deviation. **(3 marks)**

END of TASKS