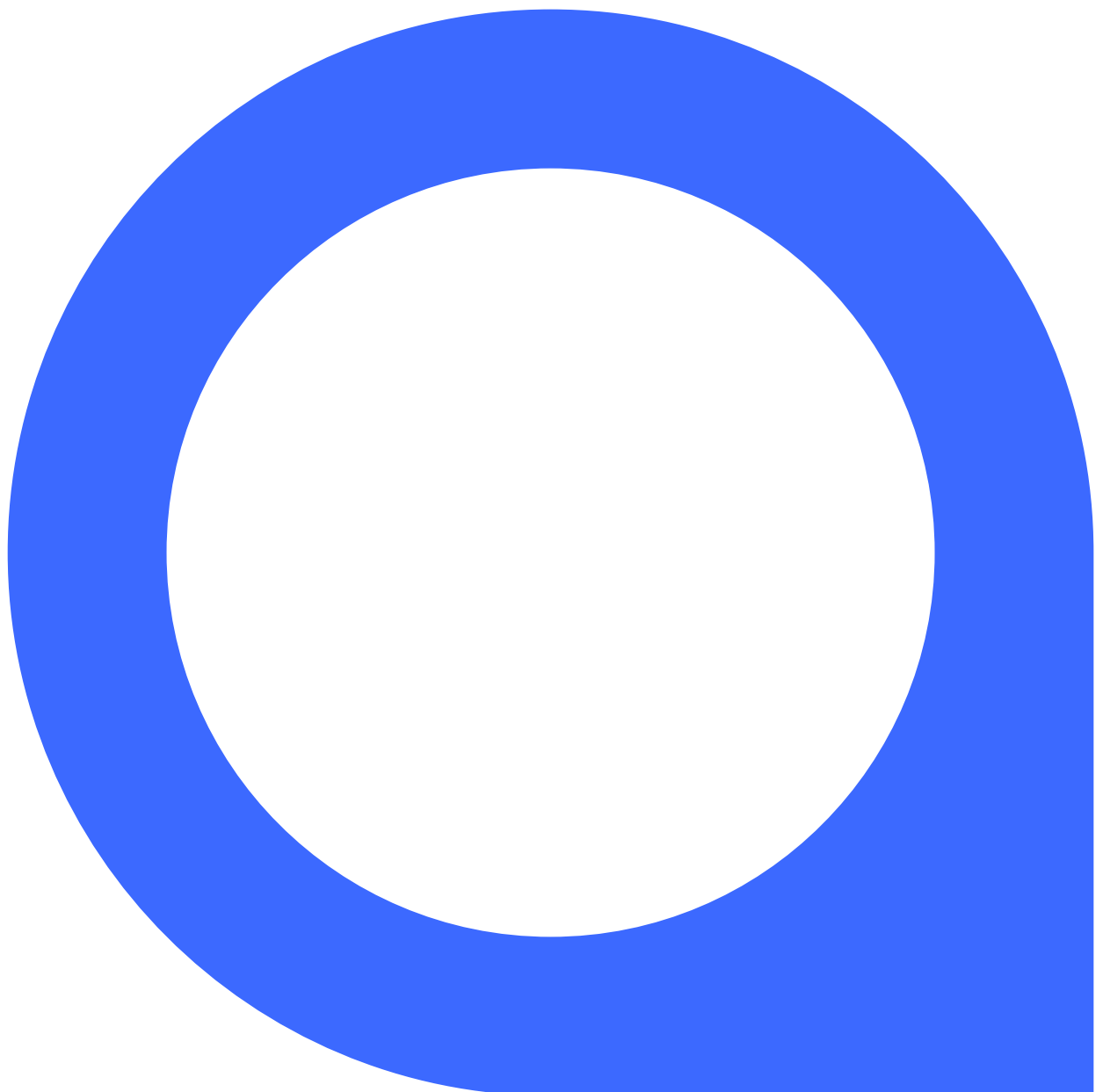


Investment

Assignment Semester 2 2024





Preamble

The main purpose of the assignment from your perspective is to help you to evaluate and apply methods for the valuation of assets and for asset selection for investment portfolios.

The specific skills that are being developed and assessed in the assignment are the ability to:

- apply subject material in an unfamiliar context;
- plan a model;
- determine appropriate assumptions;
- communicate relevant points in language appropriate to the audience, in a logical and coherent manner; and
- meet business standards for presentation of work, both spreadsheets and written materials.

These skills will also help you pass the end of semester assessment and perform well in the workplace.

This assignment provides an opportunity for you to think deeply, spend time preparing a detailed answer and self-reflect on your **writing** skills. Whilst there is ample time to write your assignment answers, you should ask yourself if you need to spend more time improving your writing skills to help you pass time-limited examinations.

The assignment requires you to create a set of sensible **assumptions** and parameters. You need to demonstrate *how* you derived your assumptions or model parameters. It is important that you describe what you did as the marker(s) will want to understand if you are able to apply knowledge to the specific situation described in this assignment. We are also looking for you to demonstrate that you can deal with uncertainty in a reasonable way.

The assignment requires you to build and use a **model**. A key actuarial skill is to obtain a grasp of the qualitative nature of outputs from models and describe them. This assignment is designed to test your ability to explain your model(s) and their outputs to a non-technical audience.

There may not be a single correct answer to the question(s) posed. Ensure you have adequately demonstrated your steps, assumptions, reasoning and checks to the marker(s) so that your answer can be considered in context.



Marking Guide

A percentage mark of at least 60% is required to achieve at least a pass grade for this assignment, which is consistent across all the subjects' assignments. This is only an indicative pass mark and the final pass mark for the subject overall may be different.

This assignment represents 20% of the available marks for the Investment subject¹. Your assignment mark will be combined with your exam mark to determine your overall result for the subject.

If you choose not to submit an assignment, or if you do not submit a reasonable attempt, then you are still entitled to sit the examination, but it is unlikely that you will reach pass standard.

It is anticipated that you will spend at least 20 hours to complete the assignment. In past semesters, some students have spent significantly more time than this, particularly those students who aim for a grade of Above Pass Level or Significantly Above Pass Level.

A detailed rubric is provided with the assignment question and will be used by the markers to assess your performance. The rubric has been posted on the Assignments page of Canvas to guide you as to what is required to achieve full marks for each part of the assignment. You should check that the components of your answer cover the items in the rubric.

You should use a clear structure in your written work, whether to make it easy for markers to find where you have responded to each of the rubric criteria.

Submission

Deadline

The deadline for submission is 12:00 pm (midday) Sydney time (AEST) on 26 August 2024.

Submit your assignment via the Assignments page in Canvas. If you experience technological issues when submitting your assignment, please send a copy of your assignment by email to education@actuaries.asn.au.

¹ For students completing the subject as a microcredential Certificate path, the assignment represents 100% of the available marks for the microcredential.



Penalties apply for late submissions (see section on 'Penalties'). You should anticipate potential delays by preparing and submitting your work in advance of the deadline.

Should circumstances arise that mean you cannot submit your assignment on time, you should contact education@actuaries.asn.au in advance of the deadline and apply for special consideration.

File format

The submitted documents must consist of a word file and an excel file. Files in other formats will not be marked. The naming convention for files is:

Investment 2024 S2 Assignment member ID(file extension as appropriate).

Please note that if you resubmit an assessment, Canvas automatically adds a suffix to the file name (such as '-1' for the first resubmission). You do not have to make any adjustment for this.

Coversheet

A coversheet for the assignment is provided on the Assignments page in Canvas. Complete and attach this coversheet as the front page of your assignment.

Complete the questions on the coversheet and ensure you are complying with the statements.

Word limit

Some questions in the assignment have a specific word or page limit. Markers will not read any part of your answer that exceeds this limit. Keep your word count within the limits that are specified. The word count includes any text within tables, text boxes or images consisting primarily of text. The word count does not include:

- contents table or index; and
- references to sources used.

Keep in mind one of the key principles taught in the Communication, Modelling and Professionalism subject: always write as clearly and succinctly as possible, while still including enough information that will be useful for your audience. With that in mind, consider whether each word, sentence, or paragraph you include in your assignment adds to or detracts from the message you are trying to convey. Importantly, know that 'more' is usually not 'best'.



Plagiarism

By submitting your assignment, you are implicitly stating that the work is your own.

Remember that an important aspect of being a professional actuary is to always act with integrity. Committing plagiarism by copying another person's work or not properly referencing other sources used in your assignment is a breach of the Integrity principle under the Actuaries Institute's Code of Conduct.

Any suspected plagiarism will be referred to the Institute's Executive General Manager, Education for review. Depending on findings, a penalty may be applied, and/or a complaint regarding the member may be made to the Institute's Conduct Committee. Subject marks may not be released until the matter is resolved.



Penalties

Late submissions

Penalties will be applied to late submissions without prior approval.

If you submit an assessment after the due date and time (whether that is the original due date or any extended due date you have been granted), the following penalties apply:

- within 24 hours of due date and time: 20% x maximum mark available (i.e. deduct 4 marks if a 20 mark assignment, deduct 10 marks if a 50 mark assignment);
- more than 24 hours (1 day) late: 100% x maximum mark available (i.e. assessment score = 0).

Incorrectly formatted submissions

There is no direct penalty if an assessment is submitted in a format with an incorrect file name or an incorrect format (e.g. submitted as a word document when a pdf document was required).

However, you may be required to resubmit your work with the correct file format, particularly relevant to modelling or coding assignments.

If a submission does not include the correct identifier (member ID) in the file name, then it may take time to identify you as the student and you may be asked to resubmit your work with an appropriate identifier.

If either situation arises then this will probably cause you to submit late and hence incur the late submission penalties outlined above. Students should therefore follow all assessment instructions provided.

Feedback

Our approach to feedback is for students to receive their grade, general feedback and a sample assessment marked as 'Significantly above pass level'.

You should review the general feedback that is provided to all students as well as the sample assessment. After reviewing the general feedback, you should use the rubric to grade the sample assessment and your submission. This will help you to compare the assessments and identify areas where your submission could have been improved.



Our belief is that this active approach to studying will provide you with a deeper understanding of where you need to improve. This is the best way for you to learn about your areas of strength and weakness. We do not provide students with individual feedback on their assessments.

At the end of the semester, you will receive:

- a letter to indicate whether you have passed or failed the subject;
- if you have failed the subject, a breakdown of your grade for each assessment;
- general feedback to all students about assessment performance; and
- sample assessment(s) that were graded as 'Significantly above pass level'.



Assignment Context

You are an equity securities analyst in the Australian Equities at the Supernova Retirement Fund (SuRF) which actively manages a \$A 40 billion portfolio of Australian listed equities. SuRF is taxed at 15% on gross dividend income received less franking credits and at 10% on realised gains.

SuRF has a policy of:

- 1) using deterministic discounted cash flow models (DCF) based on either Free Cash Flow (FCF) or Net After Tax Profits (NATP). to estimate the value of listed equities, which are purchased for portfolios with the intention of holding them for at least five years unless there is a compelling reason to sell before then.
- 2) limiting the active weight on any security (i.e. the difference between the security weight in the portfolio and its weight in the index) to no more than 4% of the portfolio value.

You have been asked to:

- 1) prepare a valuation of two of the equity securities held in the portfolio: Rio Tinto (ASX code RIO) and Fortescue Metals Group (ASX code FMG)
- 2) prepare a report for the portfolio managers covering various issues that may affect the valuation and also the market prices of RIO and FMG over the next 5 years and make recommendations about the proposed purchase and sale prices and relative portfolio weights for each of RIO and FMG .

Financial and other information about RIO and FMG that is relevant to the valuation and the report has been provided in the LMS.

You may also source and reference other information that is publically available to assist your understanding of each of FMG and RIO and any issues that may have affected their profitability or the market price of their equity securities in the past or may do so in the future.



Assignment Questions (Total 100 Marks)

You are required to prepare a report and an Excel spreadsheet that answers the questions set out below. The report must be no more than 3000 words including any words that are contained in tables included in the report. The markers may not read past 3000 words. The questions to be answered are:

Assumptions and cash flows

- 1) Justify which cash flow (FCF or NATP) will be valued in the DCF model that you employ and the forecast periods used in the DCF model **(8 marks)**
- 2) Describe how two significant aspects of the operations of each of FMG and RIO will influence the assumptions about the cash flow and net earnings that need to be incorporated in the valuation model that you will be using, referencing the components of each of the revenue and expenses, and how they may, in the future, differ from the past experience. **(8 marks)**
- 3) Describe two issues that may affect the market demand for and the price of the equity securities, of each of FMG and RIO, and how they will influence the assumptions that need to be incorporated in the valuation model, such as the discount rate. **(8 marks)**
- 4) Explain how each of the assumptions that affect the cash flows, such as the components of each of the revenue and expenses, have been incorporated into the DCF valuation model that you are using for each of RIO and FMG **(12 marks)**
- 5) Explain how you have derived the discount rates used in each of the DCF valuation models for FMG and RIO. **(8 marks)**



Valuation model

- 6) Explain how you have derived the cash flows used in the valuation model from the information provided in the LMS, and from other information that you have sourced, and any parameters, such as future iron ore prices or volumes, that you have had to estimate for any of the assumptions. **(12 marks)**
- 7) Explain how you have used either sensitivity analysis or scenario analysis to allow for uncertainty relating to the cash flows in the valuations of FMG and RIO. **(8 marks)**
- 8) Prepare a valuation of each of FMG and RIO equity securities in Excel spreadsheet form with either a scenario or sensitivity analysis to test the effect of uncertainty in the assumptions on your valuation. **(12 marks)**
- 9) Describe the sensitivity of the valuations of RIO and FMG equity securities to changes in the discount rate. **(6 marks)**

Proposed recommendations

- 10) Propose for each of FMG and RIO:
 - a) a maximum price at which their equity securities should be bought and a minimum price at which they should be sold.
 - b) the weighting that each should be held in the portfolio relative to its weighting in the ASX200.**(8 marks)**

Quality of report writing counts for 10 marks in this assignment.

END OF ASSIGNMENT