



INVESTMENT

EXAM SEMESTER 2 2022





Subject Title: Investment

Date: Tuesday, 11th October 2022

Time: 15 minutes
(Planning Time)
3 hours
(Examination)

Instructions:

You will have 3 hours and 15 minutes to complete your examination with an additional 10 minutes for submission.

You may commence typing during the planning time and remember to save your work regularly.

Type your answers using Microsoft Word and ensure that there are no links to spreadsheets.

Candidates are required to answer all questions.

Include your candidate number in the header and footer on each page of the Microsoft Word document.

Question	Marks
1	20
2	20
3	20
4	20
Total	80

This paper has **SEVEN (7)** pages (including the title page).



QUESTION 1

(20 marks)

a) Describe:

- i.** what an asset is in terms of its characteristics;
- ii.** how an asset can be valued;
- iii.** the difference between the value of an asset and its price. **(3 marks)**

b) Distinguish between the yield to maturity of a fixed income asset and the total return from holding a fixed income asset. **(2 marks)**

c) Explain what an asset class is, and how assets are classified based on their return and risk characteristics. **(2 marks)**

d) Explain two advantages and two disadvantages of having a portfolio of assets. **(2 marks)**

e) Define risk as it relates to a portfolio of investments. **(1 mark)**

f) Distinguish between the concepts of risk and uncertainty. **(2 marks)**

g) Explain how to allow for uncertainty in the valuation of:

- i.** A listed equity security; and
- ii.** A floating rate note. **(4 marks)**

h) Explain how to allow for uncertainty in the management of a portfolio of assets. **(4 marks)**

END OF QUESTION 1



QUESTION 2

(20 marks)

Many investment advisers consider that it is worthwhile employing active managers of equity or fixed income portfolios because they attempt to achieve total returns above a stated benchmark, such as the S&P 500 index or a well-known bond market index. In relation to how active managers try to achieve this, please answer the following questions.

- a) Describe the two main types of methods used to estimate the value of an equity security. **(4 marks)**
- b) Analyse the valuation assumptions that rely on fundamental analysis in the Discounted Cash Flow method for the valuation of equities. **(4 marks)**
- c) Evaluate the main arguments as to why fundamental analysis may not be able to consistently achieve returns in excess of an equity market index. **(4 marks)**
- d) Explain how active fixed income managers try to outperform the benchmark bond market index, commenting on the two main sources of risk that they seek to minimise. **(4 marks)**
- e) Propose, with reasons, how an investment portfolio can be structured to mitigate the effects of inflation on its real purchasing power by including two types of asset which may act as a hedge against inflation. **(4 marks)**

END OF QUESTION 2



QUESTION 3

(20 marks)

You are an investment adviser to a successful musician and composer who receives royalties of \$US 3 million per annum from various streaming services and other sources. The royalties have been growing at a rate of 6% p.a. for the last 20 years. The musician has been offered \$US 60 million to sell the royalties. You have been asked to advise on:

- how to evaluate the offer; and
- if the offer is accepted, how to invest the proceeds in a multi-asset class portfolio with an investment objective of achieving a total return which is 4% p.a. in excess of the rate of inflation in the USA, before investment management costs, when measured over any 8-year period;
- whether quantitative approaches to active equity portfolio management should be favoured over more traditional judgmental processes; and
- how all investments could be made subject to a set of ESG criteria.

To provide this advice:

- a) Prepare a set of notes that will assist the client in understanding how private (unlisted) assets can be valued and the assumptions that need to be made in valuing the royalties. **(5 marks)**
- b) Prepare a set of notes that will assist in setting the strategic asset allocation to the traditional asset classes equities, bonds, property securities and cash, that will support the achievement of the stated investment objective. **(5 marks)**
- c) Analyse the arguments for and against the adoption of a dynamic asset allocation process between the traditional asset classes, as a means of reducing the risk that the investment objective is not met. **(4 marks)**
- d) Describe how quantitative processes for active equity management, known as equity multi-factor models, are designed and operated. **(3 marks)**
- e) Discuss how ESG criteria could be incorporated in the investment process to be used for managing the portfolio. **(3 marks)**

END OF QUESTION 3



QUESTION 4

(20 marks)

You are the investment consultant to the Board of Trustees of a Fund. It is a \$50 billion defined contribution superannuation and pension fund. It offers its members a life-stages range of multi-asset class investment options where:

- the asset allocation to growth assets such as equities and property reduces with age
- the allocation to defensive assets such as cash and fixed interest increases with age.
- The investment policy of the Fund requires all of the allocation to growth assets to be invested in listed equities
- the allocation to listed equities is 50% in domestic equities and 50% in global equities.

The asset allocation to growth by age group and the proportion of members in each age group is currently as follows:

Member age last birthday	Strategic asset allocation to growth assets	Proportion of members	Proportion of member funds	Proportion of members in the age group who are drawing pension payments
Under 50	90%	40%	24%	0%
50-59	70%	30%	29%	5%
60-69	50%	20%	33%	60%
70 and over	30%	10%	14%	90%
All members		100%	100%	22.5%

A new law has been introduced whereby the Trustees of the Fund must assist the members who are drawing pensions (defined as "in retirement") to balance the following three objectives:

1. To maximise expected retirement income over the period of retirement (defined as the period during which they are drawing a pension from the Fund);
2. To manage expected risks to the sustainability and stability of expected retirement income over the period of retirement (i.e., make the pension last as long as possible while reducing its variability from year to year); and
3. To have flexible access to expected funds over the period of retirement (i.e., be able to withdraw lump sums.)



In response to the new law, the Trustee has surveyed the members of the Fund and it is now known that members have requirements for income in retirement and lump sum withdrawals that differ according to their overall circumstances and are not a simple function of age.

- a) Relate how the expected returns of each of the four life-stages investment options may be affected by expected inflation and interest rates and conditions in equity and bond markets over the next three years. **(6 marks)**
- b) Describe with reference to return and risk the advantages and disadvantages of the life-stages structure of the investment options. **(4 marks)**
- c) Propose an alternative way of offering members a choice of investment options that will assist them to meet the objectives referred to in the newly enacted law. **(6 marks)**
- d) Explain the parts of the Fund's investment policy and process that may need to be changed to implement the proposal that you have made. **(4 marks)**

END OF QUESTION 4

END OF EXAMINATION