

# ASSET LIABILITY MANAGEMENT

EXAM SEMESTER 2 2022



**Subject Title:** Asset Liability Management

**Date:** Thursday, 29 September 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	15
2	18
3	34
4	13
<b>Total</b>	<b>80</b>

This paper has **SIX** (6) pages (including the title page).



### QUESTION 1

(15 marks)

You are developing a deterministic valuation model to value residential properties. The resulting property values will be provided to investors to assist them with selecting properties for purchase. The residential properties will be let to tenants and generate rental income for the investor and may generate a capital gain over time.

a) To establish your model:

i. **Describe** your valuation method. (2 marks)

ii. **List** four inputs or assumptions (parameters) that will be needed for that method. (2 marks)

iii. **Explain** Redington's concerns re setting discount rates. (2 marks)

iv. **Suggest** cautionary wording to include with your model valuation results. (2 marks)

v. **Explain** two steps you will take to ensure your work is at a professional standard. (2 marks)

b) Your manager points out that investors may be using the investment rental stream to offset their own accommodation costs (rent or mortgage payments).

i. **Examine** the investor's risks in this scenario. (3 marks)

ii. **Explain** how to use a deterministic model to demonstrate the potential financial risks for the investor. (2 marks)

END OF QUESTION 1



### QUESTION 2

(18 marks)

A superannuation fund communications team is drafting the member newsletter and, as you are the lead asset consultant, they have asked you to draft the responses for these questions:

- a) **Propose** plausible reasoning for inflation increasing rapidly to 5% per annum (or more) around the world in 2022. (3 marks)
- b) **Explain** why some central banks responded by increasing cash rates. (2 marks)
- c) **Examine** the impact of high inflation on each of the three main asset classes (debt, equity, and property), for an investor. (6 marks)
- d) **Explain** why speculative bubbles arise and then pop. (3 marks)
- e) **Suggest** the likely impact of increasing cash rates on residential property pricing. (2 marks)
- f) **Explain** the benefits of asset class diversification for superannuation members (i.e. long term investors). (2 marks)

END OF QUESTION 2



### QUESTION 3

(34 marks)

Your client is a university scholarship fund (USF) that provides 30 scholarship places. Each scholar is receiving \$20,000 per annum in 2022, and this is indexed each future year with the consumer price inflation index (CPI). When one scholar completes their degree or leaves the program, another student is offered a scholarship, so that the USF is paying for 30 scholarships in any one year.

It is intended that the USF is a perpetuity, that is, it will continue to fund 30 scholarship places each year, forever, without any further donations coming in.

The USF has assets valued at \$20 million as at 30 June 2022. The USF has been invested entirely in listed shares and returned -10% over the financial year ending 30 June 2022.

Concerned about the investment loss of around \$2 million over the past financial year, the University has appointed an all-new board of trustees for the USF and the new trustees have requested your assistance to review the fund's investment arrangements.

a) As part of your investment overview briefing for the new trustees:

- i. **Explain** the characteristics of the USF's liabilities. (2 marks)
- ii. **Explain** why a real return is required. (2 marks)
- iii. **Discuss** the reasons for a risk premium for the asset sectors of equity, debt securities and direct property. (6 marks)
- iv. **Propose** an appropriate return objective for USF's assets. (2 marks)
- v. **Propose** a risk objective (constraint) for USF's investment portfolio. (2 marks)

b) The new trustees intend to maintain some exposure to equities.

- i. **Explain** the main macroeconomic influences on the equity market as a whole, with reference to current conditions. (4 marks)
- ii. **Analyse** the benefits, costs and risks of investing in equities relevant to USF via
  - purchasing listed ordinary shares;
  - purchasing listed preference shares; and
  - purchasing shares in an unlisted private company. (12 marks)
- iii. **Describe** two approaches to weighting an equity market index. (2 marks)
- iv. **Suggest** one index weighting approach for the trustees to use to benchmark their equity portfolio, with reasons. (2 marks)

END OF QUESTION 3



### QUESTION 4

(13 marks)

Your employer Cryptox is a fintech start up that manages one crypto currency, CatCoin.

Cryptox is listed on the domestic equity market.

You are paid in CatCoin by your employer (\$10,000 CatCoin each month) and spend CatCoin directly for all your online gaming and entertainment. However you must convert to domestic sovereign currency (\$) for rent and all other expenses, approximately 70% of your total annual expenses. You live and pay taxes domestically.

There are currency hedging options available for CatCoin against the domestic sovereign currency (\$).

Over the last 24 months you have observed:

Date	1 CatCoin buys \$	Cryptox share price \$
1 July 2020	\$1	\$2
1 January 2021	\$1.05	\$4
1 July 2021	\$1.50	\$20
1 January 2022	\$2.00	\$15
1 July 2022	\$0.90	\$4

a) **Discuss** possible three drivers of the currency exchange rate of CatCoin to \$. (3 marks)

b) **Explain**, using an example, why and how you might use currency options to manage your personal currency exposure each month. (4 marks)

Cryptox has offered to pay your 1 January 2023 bonus of \$50,000 (**net** of income tax) as either Cash, Cryptox shares or CatCoin. Any profits you make on later transactions on the shares or currency will be taxed at your personal tax rate. You must advise Cryptox your decision by 1 December 2022.

c) **Suggest** which form of payment you will select. (3 marks)

d) **Explain** three items of additional or updated information you will seek prior to making your final decision. (3 marks)

**END OF QUESTION 4**

**END OF EXAMINATION**