

ASSET LIABILITY MANAGEMENT

EXAM SEMESTER 2 2021



Subject Title: Asset Liability Management

Date: Wednesday, 29 September 2021

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.

There is no accompanying spreadsheet in this examination.

Question	Marks
1	20
2	23
3	18
4	19
Total	80

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



QUESTION 1

(20 Marks)

In a country with a strong economy, superannuation funds exist to facilitate each member saving during their working life and then drawing an income in retirement. Each fund pools the assets held by their members and invests the pool in one investment strategy. Each superannuation fund trustee manages one investment pool on behalf of all their own members, both savers and retirees. Each member has a personal account balance and there are no investment return or income guarantees.

Currently a superannuation fund trustee is required to invest in the members' best financial interests but there are no legislative limitations on their selection of investments.

a) For a superannuation fund in this country that is accepting new members and has a range of savers and retirees as members.

i. Discuss four features of the fund's liabilities. (4 marks)

ii. Propose one appropriate investment risk objective and one appropriate investment return objective for the fund. (2 marks)

iii. Explain the relevance of diversification to the trustee's investment strategy. (2 marks)

A fund trustee intends to carry out asset liability modelling to test investment strategies. The trustee's asset consultant uses a stochastic model for asset projections that applies assumptions about inflation, the relationships of each asset class returns to inflation and the relationships between asset classes. The model employs a Normal distribution of returns to generate future outcomes. The consultant notes that the model is only a representation and results are not guaranteed.

b)

i. Identify four key assumptions required to model the fund's future cash flows. (2 marks)

ii. List six distinct asset types to include in the asset liability model. (3 marks)

iii. Explain why the consultant makes the point that results are not guaranteed. (3 marks)

The government has decided to legislate that the superannuation funds must only invest in domestic assets. This includes equities, properties, bonds and cash.

c) Critique the proposed legislation with reference to the members' financial interests. (4 marks)

END OF QUESTION 1



QUESTION 2

(23 Marks)

An indigenous trust has been formed to manage the money arising from an agreement with a mining organisation. The trust has received a \$500 million contribution from the mining organisation for land access rights for the next 30 years.

The trust requires this money to be invested and the investment earnings spent on health and education for the benefit of the family members of that indigenous group, in perpetuity. Currently 15,000 people of all ages are recognised as family members, with over 90% located in one regional town.

You are advising the trustee board, which is comprised of two family members, a lawyer and an accountant.

- a) Your first task is to educate the board using appropriate language.
- i. Explain the role of the board in relation to the investment portfolio. (1 mark)
 - ii. List the elements the board should address in its investment policy. (2 marks)
 - iii. Explain the trust's liability characteristics. (2 marks)
 - iv. Describe the principle of asset liability matching. (1 mark)
 - v. Explain the three types of matching portfolios, with reference to the board's situation. You are not required to propose a portfolio. (6 marks)

A family member who works for an investment firm as an equity analyst has approached the board and recommended the board invest in the investment firm's equity unit trust which comprises the top 20 ASX stocks (only). The investment firm will charge an asset based fee. The mining organisation paying for the land access rights is one of these top 20 stocks.

- b) Demonstrate six financial relationships among the board, analyst, investment firm and mining organisation. (Use the table as a prompt). (3 marks)



Asset Liability Management

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<div>\$ TO</div> <div>\$ FROM</div>	Board	Board members	Analyst	Investment Firm	Mining Organisation
Board					
Board members					
Analyst					
Investment Firm					
Mining Organisation					

The trustee board has several assets under consideration:

- ASX listed share
 - Private equity investment in a local tour operator that employs family members
 - Office tower in the Sydney Central Business District
 - A global hedge fund that uses derivatives to exploit asset mispricing offered by a reputable investment fund manager (unlisted).
- c) Consider the pros/cons of each asset with respect to the board's likely investment strategy. **(8 marks)**

END OF QUESTION 2



QUESTION 3

(18 Marks)

ABC was a successful family business with 60 profitable years of operation. The family took the company public, and it is now a listed company with 100 million shares. The share price has changed from \$1 on listing in 2020 to \$0.80c today. The gross profit made in the first year listed (2020/21) was \$10 million and the dividend paid to ordinary shareholders was 5c per share.

The board propose to raise working capital for further expansion. The board is considering issuing further ordinary shares and issuing corporate bonds.

You are a family member working in the company and a strong believer in its future. You have \$100,000 to invest in either the new shares or the corporate bonds.

For this question ignore any transactional costs or taxes.

- a) The new share listing is proposed to be 6,250,000 shares and underwritten at \$0.80 per share, as at 1 October 2021.
- i. Determine the amount of capital raised for ABC assuming the listing is fully taken up at \$0.80 per share (ignore any costs). **(1 mark)**
 - ii. Calculate the dividend per share next year assuming the listing is fully taken up, another profitable year to 30 June 2022, and \$5 million is again released as a dividend. **(1 mark)**
 - iii. Calculate the maximum price you will bid to purchase a share on 1 October 2021 if your minimum return requirement is 8% per annum (nominal). Show your workings and any assumptions. **(3 marks)**

The board also proposes to issue 50,000 corporate bonds at face value \$100 each, with a coupon of 6% pa (paid annually in arrears) and term of 5 years. The issue date will be 1 October 2021.

- b) Your minimum return requirement is 8% per annum (nominal).
- i. Calculate the maximum bid price you will offer to purchase for a \$100 bond. Show your workings and any assumptions. **(3 marks)**
 - ii. Determine the amount of capital raised if all investors are accepted at this price. **(1 mark)**
- c) Assess the risk and the return characteristics for each of the two investments available from your point of view as a potential investor. **(8 marks)**
- d) State two alternative methods for the company to obtain the required working capital of \$5,000,000. **(1 mark)**

END OF QUESTION 3



QUESTION 4

(19 Marks)

In a national economy, the domestic cash rate is 0.5% per annum and price inflation has been 1.0% over the last 12 months. The stock market indices are at an all-time high. As the Covid risks are receding in this nation and unemployment rate is falling, the central bank is now actively targeting inflation of 3%pa.

a) Define

- i. fiscal policy.
- ii. monetary policy.

(1 mark)

b) Describe one possible action to take under each type of policy to address the given situation. (2 marks)

In this economy, a sovereign wealth fund (SWF) manages the money the government has set aside to pay life pensions to retired government employees.

One asset in the investment portfolio held by the SWF is a 51% stake in an electricity generation business that owns and operates several gas fired power stations located across the nation. The remaining 49% is owned by an investment bank and several superannuation funds. The business is not listed and has been profitable for several decades.

c) Assess the electricity generation business as an asset for SWF using the SYSTEM T tool.

(6 marks)

d) Identify two features of this asset (the electricity generation business) that correspond with the features of SWF's liabilities. (2 marks)

e) Describe how the asset might be valued for SWF's financial reporting purposes.

(2 marks)

f) Analyse potential risks for SWF relating to the valuation of the asset.

(2 marks)

g) Propose two other types of asset that might be suitable for SWF, with reasons. (4 marks)

END OF QUESTION 4

END OF EXAMINATION