INSTITUTE OF ACTUARIES OF AUSTRALIA

INVESTMENT MANAGEMENT **2003 EXAMINATIONS**
PAPER TWO

Answer all 6 questions.

QUESTION 1 **(17 marks)**

The asset consulting firm that you work for has been asked to perform due diligence on a US based funds manager, The Pursuit of Alpha ("TPOA"), on behalf of an Australian superannuation fund client. TPOA has an enviable track record of performance in respect of US equities over the last two years, but is relatively new to the management of global equity portfolios.

The Chief Investment Officer is a rather confident fellow, and finishes the meeting by suggesting that he is "Mr Alpha", obviously a reference to his belief in his team's ability to consistently deliver outperformance.

The mandate that the client is considering giving to TPOA is a global equities mandate.

Manager performance vs S&P 500 (US) index for TPOA's US Equities Portfolio

Month	S&P500 performance	Manager performance	Excess return
1	0.5%	0.5%	0.0%
2	-11.0%	-20.0%	-9.0%
3	8.6%	12.0%	3.4%
4	5.7%	8.5%	2.8%
5	-6.0%	-3.3%	2.7%
6	-2.7%	0.0%	2.7%
7	-1.7%	-1.9%	-0.2%
8	0.8%	0.9%	0.1%
9	8.1%	8.9%	0.8%
10	5.1%	5.6%	0.5%
11	1.1%	1.2%	0.1%
12	2.5%	2.7%	0.2%
12 month return	9.6%	12.0%	2.4%
Volatility	20.0%	28.3%	11.2%

Results period	S&P500 performance	Manager performance	Excess return
Last 3 years	-11.3%	-9.0%	2.3%
Last 2 years	-9.2%	-9.2%	0.0%
Last year	9.6%	12.0%	2.4%

(a) The tables above provide summary information relating to TPOA's performance relative to its benchmark index over several periods. Based on this data, what further questions would you put to TPOA?

Further, outline the quantitative tests that you would apply to more closely examine TPOA's claims to be able to consistently add value within risk limits. Explain how you would use each test in assessing the merits of TPOA. (10 marks)

(b) What qualitative filters would you apply to TPOA's historic performance to assess its suitability for your client? Explain how each of these filters might be used in your assessment. Outline any areas of concern that you would need to evaluate before you would be comfortable in recommending TPOA to your client. (7 marks)

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QUESTION 2 **(9 marks)**

You have recently been appointed as the asset consultant with responsibility for manager selection and monitoring for a large Australian public offer master trust.

The first task that you have been given is to pick a list of venture capital funds managers to add to the master trust's offerings. List and briefly describe the criteria you would use to select a venture capital manager.

QUESTION 3 **(10 marks)**

You are a recently qualified actuary, and have just commenced work with a retail master trust provider. Your role involves both the preparation of literature for member communications and manager selection in respect of the managers from which your retail investors may choose.

(a) Your manager has been asked to write a short article for an upcoming newsletter on investment "style" with respect to equity investment managers. In turn, your manager has requested your help in putting together this article. Draft an explanation of the "value" and "growth" styles in relation to equity investment managers. You should also comment on whether or not it is possible for a manager to possess elements of a "value" style and a "growth" style. (4 marks)

(b) An investment analyst at your firm notes that investment firm Dumpster Dudes Equity Management, previously known as a value manager, has started to invest in stocks that have previously been known as growth stocks. She is prepared to downgrade your rating of Dumpster's equity product on the grounds of "style drift".

- Explain what "style drift" is and why the observation might be important.
- Why (without further information) might she be right?
- Why might she be wrong? (6 marks)

QUESTION 4 **(20 marks)**

A general insurance company has long term liabilities (i.e. outstanding claims provisions) that are currently backed by fixed interest assets. As company management has become concerned about inflation risk, it is considering a proposal to redeem a **portion** of these fixed interest assets and use the proceeds to buy properties to back these liabilities.

(a) What are the issues to consider in terms of redeeming a part of the fixed interest book? (5 marks)

(b) What are the issues with using properties to back these liabilities? (5 marks)

(c) Instead of buying properties directly, suppose that the general insurance company buys units in a trust. The trust in turn uses these proceeds and external debt to buy properties on a geared basis. The net rental less debt repayments and expenses are distributed to the general insurance company and then used to fund the claims as they arise.

i) What are the unique issues created by this structure? (5 marks)

ii) What would be the ideal characteristics of property and debt (including the principal contractual arrangements for each) to make this structure work? (5 marks)

QUESTION 5 **(20 marks)**

You are the asset allocation strategist at a large Australian investment manager with A$100 billion in funds under management globally, with A$30 billion of this amount being in Australian shares. Although you have had some success with your judgement based approach, results have not had the consistency that you would have liked.

In future you have decided to use a quantitative model to assess the likely future returns (over both the short and long term) for all asset classes.

(a) Discuss the difficulties likely to be encountered in building such a model. (8 marks)

(b) What are the difficulties that you are likely to encounter in **implementing** your model's recommendations? (6 marks)

(c) After some diligent research, the Chief Investment Officer that you report to has suggested you use a variation of one of the Wilkie models (UK or Australian version) or the TY model. Outline the issues you will face in using such a model to guide tactical asset allocation decisions. (6 marks)

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QUESTION 6 **(24 marks)**

XYZ Superannuation Fund is an Australian superannuation fund with 30% of its total funds allocated to fixed interest investments. Currently this entire allocation is invested in Australian fixed interest assets.

To diversify its credit risk exposure, the fund would like to invest one half of this allocation, i.e. 15% of total funds under management, in overseas fixed income markets.

While this move might help to diversify its credit risk exposures, it does raise the spectre of currency risk.

(a) Outline the advantages and disadvantages of three different currency hedging approaches, namely:
- Completely unhedged
- Hedging the principal amount of the investments on a rolling 3 month basis
- Hedging each individual cashflow for all overseas bonds held.

(6 marks)

(b) To analyse the impact of the above strategies in terms of the distribution of returns, the Trustee of the fund has asked you to build a stochastic model of the Australian dollar returns from investing in a portfolio of domestic and international bonds. Describe the key elements of the model you would build. (12 marks)

(c) Having presented your concept of a stochastic return model for global bond portfolios, the Trustee has engaged you to build the model. In your presentation, however, you suggested that there are a number of issues to be wary of in interpreting the results of such modeling. The Trustee, keen to be aware of these issues before you present your final findings, has asked you to formally write to them outlining these issues (briefly). Draft a brief response to the Trustee in letter format.

(6 marks)

END OF PAPER TWO

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