EXAMINATION

14 April 2008 (pm)

Subject SA6 — Investment Specialist Applications

Time allowed: Three hours

INSTRUCTIONS TO THE CANDIDATE

1. *Enter all the candidate and examination details as requested on the front of your answer booklet.*
2. *You have 15 minutes at the start of the examination in which to read the questions. You are strongly encouraged to use this time for reading only, but notes may be made. You then have three hours to complete the paper.*
3. *You must not start writing your answers in the booklet until instructed to do so by the supervisor.*
4. *Mark allocations are shown in brackets.*
5. *Attempt all 3 questions, beginning your answer to each question on a separate sheet.*
6. *Candidates should show calculations where this is appropriate.*

Graph paper is required for this paper.

AT THE END OF THE EXAMINATION

Hand in BOTH your answer booklet, with any additional sheets firmly attached, and this question paper.

In addition to this paper you should have available the 2002 edition of the Formulae and Tables and your own electronic calculator from the approved list.

1 You are the newly appointed Chief Investment Officer for a life office that has previously invested part of its cash portfolio in asset-backed commercial paper and part of its bond portfolio in collateralised debt obligations ("CDOs"). The office also invests in a multi-strategy hedge fund. The Compliance Manager is preparing a report on the investment policy of the office for the Risk Committee and has requested some information from you regarding these assets, with which she is unfamiliar.

(i) Define asset-backed commercial paper. [2]

(ii) Describe a CDO. [2]

(iii) Explain how a tranched structure can help minimise the cost of finance. [6]

(iv) (a) Explain the "carry" of an asset.
(b) Give two examples of negative carry trades.
[3]

The basic terms of a transaction the hedge fund has completed recently are set out below:

Hedge fund borrows:	500,000,000 Yen at overnight rate of 0.5% p.a.
Hedge fund invests:	Proceeds in 1 month US commercial paper yielding 5.3% p.a.
Exchange rate:	1 US Dollar = 120Yen
Interest rates:	Actual/360 convention

(v) (a) Calculate the daily dollar profit from the trade, assuming a constant US Dollar:Yen exchange rate over the duration of the trade.

(b) Explain what a "haircut" is in the context of collateral against borrowings.

(c) Describe why a haircut would limit the amount of leverage that could be applied to this trade.

(d) Calculate the maximum leverage for a haircut of 7.5%.
[7]

Having read the Compliance Manager's report, the Chief Risk Officer, who chairs the Risk Committee, is concerned that some of the life office's investment managers are following risky investment policies compared with their peers and wishes to impose new limits on investments.

(vi) Justify on investment grounds why it would be reasonable for a life office to invest part of its portfolio in CDOs, highlighting potential issues associated with investing in these securities. [7]

The hedge fund invests its capital equally in ten uncorrelated strategies (each of which consists of multiple trading positions).

(vii) Discuss why the Compliance Manager might express concerns if the hedge fund were to apply leverage at close to the theoretical maximum levels. [9]
[Total 36]

2 A small UK company has a closed and mature final salary pension scheme with assets of approximately £50 million. After the last actuarial valuation, the scheme's trustees were advised to invest the majority of the scheme's assets in two passively run bond funds, one index-linked and one corporate, to better "match" the scheme's mainly LPI linked liabilities. The remainder, about £5 million, is in an actively run UK equity portfolio.

The company has now been taken over by a large multinational organisation, which operates a large final salary pension scheme, in the UK, which is still open to new entrants. This scheme has assets of £500 million which are managed, in a segregated fund, by a single external manager, using a balanced mandate with no investment constraints.

As the newly appointed investment consultant to the smaller scheme you have been asked to review the rationale for the current investment policy and propose how best to integrate the smaller scheme into the larger scheme's segregated fund.

(i) Discuss the possible rationale behind the investment strategy for the smaller scheme. [10]

(ii) Discuss potential investment issues that will need to be considered in transferring the assets of the smaller scheme to the larger scheme's segregated fund and how these may be overcome. [10]

[Total 20]

PLEASE TURN OVER

3 The chief executive of a multinational company has announced recently a plan to demerge its domestic and international businesses. As a consequence of a history of major acquisitions, the domestic business sponsors a very large defined benefit pension plan of which 80% of the liabilities are in respect of current and deferred pensioners.

The company has tried to separate their businesses before, but under guidance from the country's regulator, the trustees of the pension plan have argued that the sponsor's covenant would be weakened by such a transaction and so the company should increase the level of funding within the pension plan to make it sufficient to enable the trustees to secure the current and deferred pensioner obligations with an independent insurance company.

Due to a combination of rising stock markets and long-term bond yields, the corporate treasurer believes that the funding level of the pension plan is such that he could convince the company to make up any funding shortfall required to buyout the deferred and pensioner liabilities and so proceed with the proposed demerger. You have been approached by the corporate treasurer to assist him to prepare a presentation for the company's board that sets out the issues surrounding the possible transaction and outlines a possible solution to these issues.

(i) Sketch on a graph the liability cashflows of a typical defined benefit pension scheme over time, illustrating the effects of changes in inflation and longevity. [4]

(ii) Describe the typical features of a defined benefit pension scheme having regard to the type of liabilities, funding levels, risks faced and investment policy. [5]

(iii) Outline the financial risks and considerations that would concern the company in operating a defined benefit pension fund. [6]

The corporate treasurer has been approached by a number of companies interested in taking on the assets and liabilities of the pension fund. The treasurer is concerned that, as investment markets are volatile, the existing assets of the pension fund together with the special company contribution will not be sufficient in the end to fully buyout the liabilities.

(iv) (a) List the risks that a defined benefit pension scheme faces. [4]

(b) Describe the adverse scenario for the four principal risks. [4]

(c) Outline how these risks could be managed and the relative cost of each. [4]

(v) Outline the key financial aspects that the company needs to consider when deciding whether to transfer their pension scheme liabilities to a third party or to manage the investment risks internally as now. [17]

[Total 44]

END OF PAPER