EXAMINATION

18 April 2007 (am)

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 both 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.

1 You are the investment consultant to a defined benefit pension scheme with £9bn of assets actively managed by specialist managers. The scheme is 90% funded on a risk-free basis (where the liabilities are discounted at swap yields). 60% of the scheme's assets are invested in a mixture of inflation index-linked and fixed interest bonds with 30% in global equities and 10% in real estate. To reduce the risk level, the scheme trustees have been advised by an investment bank to execute swap transactions to extend the duration of the bond portfolio to equal that of its liabilities and to match the inflation characteristics of the liabilities.

(i) (a) Define the term "vanilla interest rate" swap.

(b) Draw a diagram of how the investment bank would set up the swap contract with the pension scheme.
[4]

(ii) Explain why the trustees may be interested in an interest rate swap. [4]

(iii) Outline the key sources of risk that will remain within the scheme after the swap programme has been completed. You should distinguish between risks attaching to the bond and the non-bond assets, relative to the scheme's liabilities. [8]

(iv) (a) Explain how diversification of the non-bond portfolio using alternative asset classes can reduce risks.

(b) Comment on the expected return of such a portfolio.
[4]

(v) Explain why implementing a swap overlay over the existing non-bond assets may be less effective at reducing the annual variation in funding level than diversifying the non-bond assets. [7]

At the trustees' meeting, as an alternative it is suggested that the trustees move all the assets to one active investment manager and implement a dynamic liability benchmark. The scheme has historically held equities in the anticipation of generating excess returns to make up any funding deficit. However the trustees are becoming more concerned with limiting risk in the event of an equity market downturn due to expected changes in the local economy.

(vi) (a) Explain what is meant by a dynamic liability benchmark.

(b) Comment on its appropriateness for different pension schemes.
[4]

(vii) Describe how the economic cycle can impact on the valuations of different types of companies. [5]

(viii) (a) Give three examples of how the trustees could limit the downside risk of a market fall in equities.

(b) Outline the potential problems with these methods. [9]

Six months after the transition to the swap overlay strategy has been completed, an independent external trustee joins the board. She comments that in her view it is most appropriate for shorter term liabilities to be matched, rather than longer term liabilities that are subject to more uncertainty.

(ix) Explain why the approach the new trustee has outlined is unlikely to achieve the desired risk reduction. [7]

(x) (a) Outline the considerations that would need to be made when formulating an alternative strategy that could result in a similar risk reduction to that expected under the swap overlay strategy.

(b) Comment on alternative methods of risk reduction that could be adopted.

[6]
[Total 58]

2 You are an investment consultant for the defined benefit pension fund of a company with assets of £500m. The assets are managed across multiple asset classes by a single investment company. Having decided on a new asset allocation benchmark for the fund, the trustees have asked you to review the investment management arrangements of the pension fund.

(i) Describe the investigations you will carry out in your review. [12]

The company has decided to sell one of its subsidiaries and the pension fund is required to pay a bulk transfer of approximately £100m to another pension fund. The amount to be paid is linked to the total return of the FTSE All Share Index.

(ii) Explain the investment risk for the pension fund as a result of this sale. [5]

(iii) (a) Explain how derivatives may be used to mitigate this risk.

(b) List the problems that may arise under such a process.

[5]

(iv) Outline the advantages and disadvantages of:

(a) cash transfers and

(b) *in-specie* asset transfers

from the point of view of the trustees of the existing scheme and the trustees of the receiving scheme. [10]

 PLEASE TURN OVER

As a result of the sale the fund's liability profile has changed and it is likely that cash outflows on benefits and expenses will exceed income over the next few years. You have been asked to prepare a report to advise the trustees how the fund's investment strategy should change to accommodate the new circumstances.

(v) (a) Set out the modelling investigations you would perform.

(b) Discuss the investment strategy you would put to the trustees to accommodate the net cash outflow that is likely.

[10]
[Total 42]

END OF PAPER