EXAMINATIONS

11 September 2003 (am)

Subject 401 — UK Fellowship Investment

Paper One

You must answer this subject only, you may not attempt another subject in the 400 series.

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 9 questions, beginning your answer to each question on a separate sheet.*

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 Actuarial Tables and your own electronic calculator.

1 An investor is comparing the returns of a UK unit-linked life assurance fund invested in US equities with those of another unit-linked life assurance fund invested in US equities but operating in another European jurisdiction. In the other European jurisdiction, the fund pays no tax on investment income or capital gains. Instead, investors are taxed on the profit they have made when they cash in their unit-holdings in the fund.

Discuss the impact of the different tax treatments of the two funds on the performance of the UK unit-linked fund compared with the one based in the other European jurisdiction. [4]

2 (i) State the two main sources of risk and return in overseas investment. [2]

(ii) Discuss the impact of using forward foreign exchange contracts to change the risk and return profile of an overseas investment portfolio. [5]
[Total 7]

3 The pensions regulator and the accounting standards body in a country have decided to introduce a new accounting standard for companies sponsoring defined benefit pension schemes. There has been no previous practice of reporting pension scheme information on the balance sheet. The new accounting standard requires such companies to include the surplus or deficit in the defined benefit pension scheme as a balance sheet item. In arriving at the surplus or deficit, actuaries are required to value the assets of the defined benefit pension scheme at market value and the liabilities of the scheme using the yield on long-dated government bonds.

(i) Discuss the implications of the new accounting standard for the volatility of balance sheet values. [7]

(ii) Suggest ways in which the investment policy of the defined benefit pension scheme could be altered to reduce the balance sheet volatility and outline any other implications of your suggestion. [6]

Following the introduction of the new accounting standard, the finance director of a company sponsoring a defined benefit pension scheme suggests to the trustees of the scheme that equities are a wholly inappropriate asset class with which to match the liabilities of a defined benefit pension scheme.

(iii) Discuss the finance director's suggestion and the characteristics of an investment policy that might meet his concerns. [7]
[Total 20]

4 Outline the advantages of collective investment vehicles over direct investment for personal investors in the UK. [7]

5 (i) State the regulatory objectives of the Financial Services Authority. [2]

You are an experienced actuary planning to set up your own firm to advise business clients on a wide range of investment issues. Part of your planning involves a decision on the most appropriate legal authorisation for your services.

(ii) Discuss the options available to you. [4]

(iii) How would your options change if your firm were also to offer advice to individuals? [2]

Your firm is now established and suitably authorised under the Financial Services and Markets Act 2000. A case has arisen where part of a company you advise is to be bought out by its management. Both sides of the buy-out need advice and both have come to you for help.

(iv) Comment on the difficulties arising from the request to be involved on both sides of the deal and the approaches that can be taken to resolve these. [5]
[Total 13]

6 A wealthy private client employs a portfolio manager under an investment management agreement that gives the manager freedom to use derivatives. The manager believes that there will be a significant move in the price of a stock but is uncertain as to the direction of that move.

(i) Define four different derivative strategies using options that the manager could use to exploit his belief in relation to the stock price movement. [6]

(ii) Explain the differences between the four different strategies. [6]
[Total 12]

7 (i) Describe the main operational features of the commodity derivatives market. [3]

(ii) Suggest a formula to be used for valuing a commodity future on the platinum market, defining all terms. [2]

(iii) Discuss the suitability of commodity investment for an institutional investor. [2]
[Total 7]

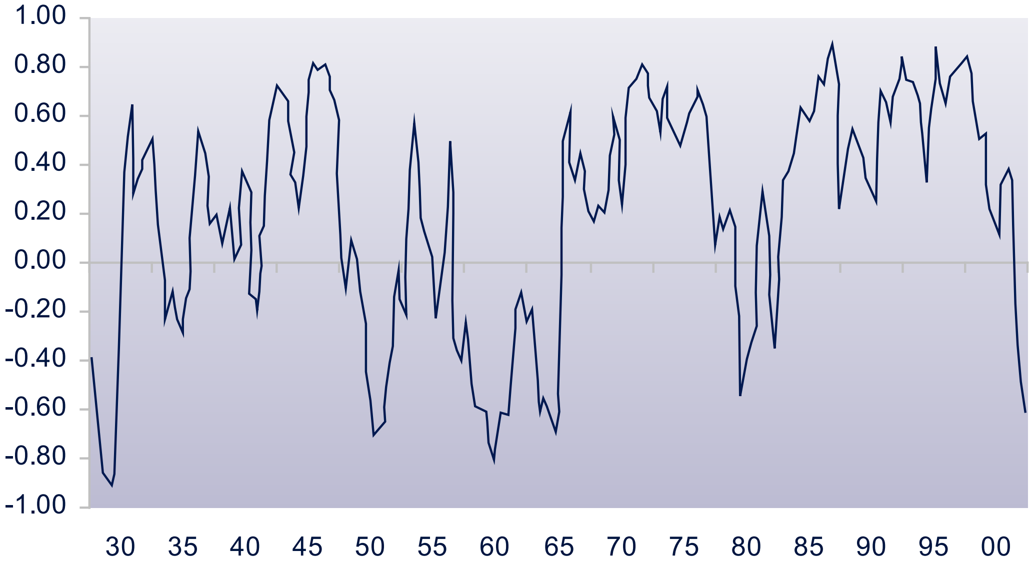
8 (i) Outline the behaviour of the UK equity market over the ten year period to 31 December 2002 commenting briefly on the main reasons behind the market's behaviour. [6]

(ii) Describe the changes in UK short-term interest rates over the same ten year period. [3]

(iii) Comment on the effect the interest rate changes have had on the returns achieved by UK government-backed bonds stating other major factors which have also influenced the returns. [3]

The chart below shows the correlation between UK equity and bond monthly returns since the 1930s:

Correlation



Year

(iv) Comment on the implications of a prolonged period of negative correlation between the two asset classes for an investor considering their asset allocation. [4]

[Total 16]

9 You are an experienced investment manager specialising in company research and client portfolio management. You have been called in by the trustees of a defined benefit pension plan for an opinion on a request they received from the company sponsoring their plan.

The plan has for many years operated with a high equity allocation. This has been successful over the long-term but over the last few years, the value of the assets relative to the liabilities (which are valued based on bond yields plus a margin for the assets outperforming bonds) has fallen substantially. A summary of the funding position as at the latest actuarial valuation date (one year ago) is shown below. All values illustrated are market based and costs/contribution rates are expressed as percentages of pensionable payroll.

$\dfrac{\text{Assets}}{\text{Liabilities}}$	80%
Cost of accruing benefits	17%
Additional costs required to fund deficit over future working lifetime of members	6%
Current member contribution rate	3%
Agreed company contribution rate	14%

An asset liability model has alerted the trustees to the high level of variability in the funding level and implied contribution rate required dependent on future economic conditions. In full consultation with the sponsoring company, an investment proposal has been made to halve the equity content in favour of bonds over the next calendar quarter.

However, since the proposal was made there has been a 20% fall in the equity markets. This has prompted the company to write to the trustees requesting that the switch to bonds be deferred. This request is at odds with the trustees' desire to reduce risk overall.

(i) Comment on your suitability to provide the opinion as requested taking into consideration your experience. [2]

(ii) Discuss briefly the issues outside your area of expertise where additional input will be required. [2]

(iii) Outline the possible rationale for the company's request. [4]

(iv) Comment on the acceptability of the request to the trustees. [4]

(v) Suggest with reasons a potential solution to the problem. [2]

[Total 14]