

## EXAMINATIONS

8 April 2003 (am)

### Subject 301 — Investment and Asset Management

*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 12 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** Outline the key issues to be considered when forming a long-term investment strategy for a charitable trust. [5]
- 2**
- (i) Define a generalised formula for a total return index suitable for property performance measurement purposes, stating any assumptions you would need to make. [2]
  - (ii) Outline the problems in constructing such an index for quarterly publication. [4]
- [Total 6]
- 3** Over the last five years, a general industrial company has restructured itself, principally through acquisition into an information technology and communication services company. The company has borrowed heavily to support its activities. Due to a recession in the market, the company is struggling to cover its debt repayments and also needs further capital to complete research into a new component that the management believes will generate 60% of revenues over the next 10 years. The company has recently appointed a debt management consultant who has approached the bank with a proposal to swap its loans to the company for equity.
- (i) Set out the principal characteristics of this company. [4]
  - (ii) Outline the factors that will affect the bank's preference for debt or equity investment in the company stating any further information you would require in order that a decision may be made. [8]
- [Total 12]
- 4**
- (i) Define "rack rent" and "marriage value". [2]
  - (ii) List reasons why the rack rent might be higher than the rent currently being received. [2]
  - (iii) Describe a situation where a tenant may have no option but to pay a rent higher than the rack rent. [2]
- [Total 6]

**5** List the problems that may be encountered with overseas investments. [5]

**6** (i) State reasons why an individual might be attracted to collective investment vehicles or policies, rather than direct holdings. [3]

(ii) List the key differences between an investment trust and a unit trust. [4]

(iii) Explain why an investment trust would typically have a more volatile share price than the offer price of a unit trust. [4]

[Total 11]

**7** An investment bank is pricing a 15 year swap using its internal cost of capital of 8% per annum. In return for a swap premium, the bank will pay its client the excess interest payable on a variable rate loan of LIBOR + 100bps above a fixed rate loan of 5.5% (the client will pay the bank in the event of the fixed rate loan giving rise to higher payments than the variable rate loan). These payments are made at the end of each quarter. The capital payment under the client's loan is not covered by the swap arrangement.

(i) Assume LIBOR is initially 4%, and remains at this level for the first 7 years of the term, and is 6% thereafter. Calculate the present value of the cashflows covered by the swap based on a principal sum of £10 million. [6]

(ii) Explain why in practice the bank will charge more than the present value calculated in (i) above. [5]

[Total 11]

**8** (i) Describe a classical split rate system of corporation tax. [2]

A government of a developing country has approached you as an investment consultant to advise them on restructuring the taxation system to encourage longer term investment in companies listed on their local stock exchange.

(ii) Describe methods of taxation that would encourage longer term investment. [4]

[Total 6]

- 9** Lifeco is a major insurance company operating mainly in its domestic market. In order to raise additional finance, it has decided to issue a new convertible bond. The details of the convertible bond are:
- Coupon 2.75% payable annually.
  - Term 5 years.
  - Conversion price 125% of the share price at issue at any time before redemption provided the share price has increased by 30% at any time since issue.
  - The company may redeem the convertible after 4 years, and thereafter at the option of the company, at par, providing the price exceeds 120% of the conversion price.
- (i) Explain why Lifeco might choose to raise additional finance by issuing a convertible bond. [3]
- (ii) Explain why Lifeco might have set the redemption terms it has. [2]
- The share price at issue is €1.00 and the current prospective dividend yield is 3%.
- The dividend of the company over the past year grew by 15%. Having analysed the prospects for Lifeco, you estimate that the dividend growth rate experienced in each subsequent year will fall by 2% p.a. in each of the next 6 years, before ultimately stabilising at 3% p.a.
- (iii) Estimate the value of the convertible bond to an investor who requires a return from equities of 6.09% p.a. Ignore taxation. State your assumptions. [9]
- (iv) After 4 years the market price has just reached €1.25. The company made an open offer to repurchase the convertible bond at €101.6 per €100 nominal. Suggest possible reasons why the company has made this offer. [4]
- [Total 18]

- 10** An investment bank is establishing a series of bond indices to be used in combinations as benchmarks for bond portfolios which it manages.

List the features of bonds that should be taken into account in establishing these indices.

[4]

- 11** A developing country is reviewing the extent and form of regulation of its investment markets because of complaints about the cost of regulation.

Explain the economic costs of regulation.

[5]

- 12** An insurance company operates a unitised with-profit fund. Valuations are carried out at each month end. These valuations are available 3 weeks after each month end and form the basis for the market value adjustment factors used for adjusting surrender values.

The appointed actuary is concerned that because of the market volatility there has been adverse selection against the with-profits fund. You have been asked to submit a proposal to update valuations and investment performance on a more frequent basis. In particular you have been asked to be able to provide an update immediately after an adverse market movement.

The unitised with-profits fund has been divided into separately managed funds for each asset class as follows:

<i>Asset class</i>	<i>% of the fund</i>
Fixed interest medium term corporate bonds	18%
Fixed interest medium term gilts	4%
UK equities	45%
Non-UK equities	15%
Property	15%
Cash	2%
Commercial Mortgages	1%

Outline the investigations you would undertake and set out the points you would make in your reply to the appointed actuary. [11]