

## EXAMINATIONS

15 September 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 11 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** Describe three instruments that are used in the money markets. [6]
- 2**
- (i) Define the term equity risk premium. [1]
  - (ii) Describe why a change in the equity risk premium will alter the valuation of equities. [3]
  - (iii) Give examples of two events that would alter the equity risk premium. [2]
- [Total 6]
- 3** A major institutional investor has decided to make a direct investment in property. List the advantages of large offices relative to other types of property. [5]
- 4** An institutional investor has conducted an asset-liability modelling exercise, and as a result has decided to invest a proportion of its portfolio in the Global Equity asset category via an external fund manager.
- List the decisions that need to be made by the institutional investor with regard to this investment in Global Equity (but not about the choice of fund manager). [8]
- 5** You are an analyst at a firm of global equity investment managers. Your firm's approach to stock picking is based on fundamental share analysis and your day-to-day work involves carrying out this analysis for a particular sector of the global market.
- (i) List the sources of information you would expect to use in your work. [5]
  - (ii) Describe the process you would expect to go through in order to establish whether a stock should or should not be part of your clients' portfolios. [5]
- One of your stock recommendations held across all your clients' portfolios has seen a substantial fall in its market price over a calendar quarter. Your analysis suggests that the price now represents extremely good value. Based on this view, your recommendation to colleagues would be to substantially increase the allocation to the stock.
- (iii) Suggest possible reasons for the difference between your and the market's view of the fair price for the stock and outline the risk faced by your firm if your recommendation is made and adopted. [3]
- You have added to your holding and the price continues to fall.
- (iv) Describe briefly what actions the firm may take when reassessing the position. [3]
- [Total 16]

- 6 List the ways in which costs can arise when an investment regulatory system is developed. [6]

- 7 (i) Outline the process used by futures exchanges to remove the credit risk of individual participants. [2]

- (ii) Table 1 below shows part of the operation of a margin account for a short position in two gold futures contracts. The initial margin is US\$2,000 per contract and each contract is for delivery of 100 ounces of gold. The closing futures prices are in US\$ per ounce of gold.

Copy the table into your answer book and fill in the entries in the blank columns.

**Table 1**  
**Operation of the margin account for two gold futures contracts.**

<i>Date</i>	<i>Closing Futures Price US\$</i>	<i>Daily Gain (Loss) US\$</i>	<i>Cumulative Gain (Loss) US\$</i>	<i>Margin Account Balance US\$</i>
Futures price at which contract is entered into: May 3rd	400			
May 3rd	396.5			
May 4th	399.4			
May 5th	400.4			
May 6th	399.7			
May 7th	405.9			
May 8th	397.9			

[6]

- (iii) Describe briefly two major differences between the trading of currency futures contracts on an exchange and the trading of forward currency contracts in the Over-the-Counter (OTC) market. [2]

[Total 10]

- 8 (i) Write down a formula for the after tax return for an investment whose dividend is  $d$  and capital gain is  $g$ . [1]

- (ii) State any assumptions that you have made in this formula. [1]

- (iii) Describe what other factors an individual will need to take into account in practice to determine his after tax return. [3]

[Total 5]

- 9** An open-ended investment company (OEIC) invests the capital of its shareholders in a portfolio of not less than twenty bonds issued by US companies that have a MMM, non-investment grade, credit rating. All bonds are denominated in US Dollars. On average, five percent (5%) of bonds with a credit rating of MMM default over a 12-month period. The share price of the OEIC is always equal to its net asset value per share.

Over the last five years none of the bonds held by the OEIC have defaulted and the share price of the OEIC has increased by 14% per annum compound with a standard deviation of return of 5% per annum. Over the same period the risk-free rate of interest has been 4% per annum.

- (i) State the formula for and calculate the Sharpe ratio for the risk-adjusted performance of the OEIC over the last five years. [2]

Over the same period, an index of US government bonds and an index of MMM-rated US companies gave total returns (capital growth and income) of 8% and 2% per annum respectively. Both of these indices are made up of about twenty bonds which have a similar coupon and maturity profile to the OEIC's portfolio.

- (ii) Suggest reasons why the investment company's portfolio has out performed:

- (a) the US government bond index and  
(b) the index of MMM-rated US companies.

[4]

- (iii) Discuss the usefulness of the Sharpe ratio in assessing the risk-adjusted investment performance of this manager and comment on the skills of the manager of the investment company's portfolio. [5]

[Total 11]

- 10** A city in a developing country is contemplating bidding to host the Olympic Games in 2016. History shows that the costs involved in hosting such events have been much greater than expected. Your merchant bank has been asked to advise the committee overseeing the bid.

- (i) Outline the procedure you would adopt in establishing the feasibility of the bid by the city. [8]

- (ii) List the risk factors you would include in your risk matrix. [4]

- (iii) Describe briefly the ways in which the bid could be financed and the factors that need to be taken into account. [5]

[Total 17]

**11** Following the death of a relative, you have inherited a sum of money worth approximately five times your net annual salary. Your personal circumstances are as follows:

- You are working and belong to an occupational pension scheme.
- You have ten years to work before normal retirement.
- You are married with no children.
- You are a home owner with an accompanying mortgage.
- Your mortgage has five years to run and currently monthly mortgage payments amount to around one-third of your net monthly income.
- You have cash savings amounting to approximately one year's net salary.
- You use credit and store cards to manage cash flow on a monthly basis.
- You are in good health but have for some years taken part in a private healthcare scheme.

- (i) Using the details above and stating any additional necessary assumptions, describe your liabilities and your assets excluding your inheritance. [4]
- (ii) Comment on the degree of matching between the two. [2]
- (iii) Suggest possible uses for your inheritance commenting briefly on the suitability of the various options. [4]

[Total 10]