

EXAMINATIONS

20 September 2004 (am)

Subject 421 — SA 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 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** You advise the trustees of a closed South African pension fund with 80% of its liabilities in respect of pensioners (whose pensions are linked to price inflation). The assets are relatively well matched to the liabilities, with 35% invested in index-linked bonds, 50% invested in fixed interest bonds and 15% invested in South African and overseas equity funds. The trustees have recently been approached by an investment bank who has suggested matching pensioner liabilities more closely by setting up a series of swap arrangements covering up to 30 years to convert fixed interest payments to inflation linked payments, and have asked for your comments on this proposal.

Describe the factors relating to the proposed arrangement that you would consider in framing your advice to the trustees.

[10]

- 2** As part of the Government's proposals to simplify tax-efficient savings, retirement funds and life insurance savings are to be consolidated under a single umbrella which provides exemption from income and capital gains taxes, but subject to a maximum of R2.5 million per person. Contributions and withdrawals are to be each limited to R500,000 in each tax year. A 20% wealth tax will be levied on any excess assets in an investment of this type at the end of each tax year.

Describe the effects of this change on the South African personal savings environment, and discuss how you would expect individuals' saving patterns to change.

[10]

- 3**
- (i) Explain the methods that the South African Reserve Bank and other institutions use to issue debt. [3]
 - (ii) Briefly describe the South African gilt strip market. [3]
 - (iii) Give reasons why the redemption yield for a bond might lie above the All Bond constituents' yield curve. [3]
- [Total 9]

- 4** Describe the tax treatment for individuals and institutional investors in South Africa for:

- (a) Convertibles
- (b) Money market instruments
- (c) Derivatives

[6]

- 5** A large insurance company has a very large portfolio of corporate loans. Describe how it could reduce its credit risk exposure for the portfolio. [5]

- 6** (i) Describe the principal uses of commodity futures and forward contracts. [2]
- (ii) List with reasons which commodity futures and forward contracts you might expect a South African agricultural producer to use. [3]
- (iii) Outline the investment characteristics of commodity futures. [3]
- [Total 8]

7 The board of trustees to a South African retirement fund has approached you for advice on devoting part of the fund's assets to investments directed at ethical and/or socially desirable investments. List the major considerations that should guide the trustees and the avenues available to them to achieve this. [8]

8 An investment researcher has been comparing the yields offered by SA corporate bonds and SA gilts and concluded that "if you buy SA corporate bonds and sell SA gilts short you are guaranteed to make large profits".

- (i) Explain the investment researcher's rationale for this statement. [2]
- (ii) Comment on the validity of the statement. [6]
- [Total 8]

9 You are the investment actuary of a life office, which invests in investment trusts. You are provided with the following information on the performance of two investment trusts and the equivalent benchmark index over a 3 year period. The annual risk free rate of return over this period is 8.5% per annum.

	<i>Trust A</i>	<i>Trust B</i>	<i>Index</i>
	%p.a.	%p.a.	%p.a.
Annual Return	14.0	15.0	13.0
Standard Deviation	16.78	23.63	12.21
Correlation Coefficient with Index	0.75	0.36	1.00

- (i) Calculate four different risk adjusted performance measures for each trust. [8]
- (ii) Comment on the results from (i) stating any limitations that apply to them. [4]
- [Total 12]

- 10** Due to a significant rise in professional indemnity insurance premiums, a management consultancy has decided to establish its own offshore captive insurance company. It believes that it will receive premium income of R80m per annum with claims likely to be settled 4 years later on average. The directors have asked you to advise on an appropriate investment strategy. One of the directors is also employed by an investment bank and has heard that high yield bonds and private equity would offer an attractive alternative to mainstream investment and asks you to specifically consider this within your recommendations.
- (i) Outline the major factors affecting the choice of asset allocation and strategic benchmark. [6]
 - (ii) Comment briefly on the director's proposal including other alternative investments that the board might consider. [4]
- [Total 10]
- 11** You have recently been appointed as the investment consultant to a company. The company made a major acquisition in December 2000 and, before you were appointed, a significant transfer of assets into their defined benefits scheme was made in December 2002 in respect of the liabilities received. As part of the sale and purchase agreement governing the transfer it was agreed to use the FTSE/JSE All-Share Index to adjust the transfer value due from the date when the liability was assessed until the date of payment to compensate for the investment return foregone. The latest actuarial valuation of the scheme has revealed an increased deficit in the funding caused by investment experience. The chairman of trustees has asked you to prepare a report for the board reviewing the transfer and identifying areas where the scheme could have lost money.
- (i) List the areas where the investment losses could have developed. [5]
- The company is about to make a similar sized acquisition.
- (ii) Suggest how your client could reduce the investment risks that arise as a consequence of the prospective transaction. [3]
- [Total 8]
- 12** Discuss briefly the problems in constructing a US smaller companies index which would be suitable as a basis for index tracking management. [6]

END OF PAPER