Actuarial Society of South Africa

EXAMINATION

6 October 2009 (pm)

Subject SA6RSA – 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 all three questions, beginning your answer to each question on a separate sheet.

6. Candidates should show calculations where this is appropriate.

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 from the approved list.

Question 1

You work as the asset consultant of a large South African life assurance company with subsidiaries in a number of different emerging market countries. Your company recently bought a small life company, Lifeco, in a developing country, Country X, in which it previously had no presence.

Country X is characterized by a GDP growth rate that has fluctuated between negative 1% and positive 2% p.a. during the last 10 years and an inflation rate that has varied between 8% p.a. and 15% p.a. over the same period. The Central Bank of the country has maintained positive real rates over this period. The economy of the country, with a GDP of around 65% of the size of South Africa's, is largely commodity based, and has a free floating currency. Exchange controls exist, with institutions allowed to invest a maximum of 30% of their assets outside the country. It has a reasonably well developed stock exchange with the largest 10 listed shares, by market capitalization, dominated by resource companies, but also includes some banks and a retail company. The bond market is not well developed, with most of the bonds in issue being shorter dated government issues.

At the time of acquisition Lifeco sold only protection policies. Your company intends to augment its product range by introducing a suite of savings products. They are thinking of introducing a product range similar to the one they have in South Africa which includes a smoothed bonus product, immediate annuities and a derivative based absolute return product. The South African Absolute Return product has an inflation plus 6% target return, with the result that its product design allows for a large portion of its assets to be invested in equities. Downside risk is reduced by buying at the money put options. The cost of these options is paid for by writing puts at a level 30% lower than the bought puts, together with writing out of the money calls, such that the written puts and calls pay for the bought puts.

In your role as asset consultant you have been asked to assist in advising the product development department in all investment related matters associated with the introduction of these products to the market.

You have been asked to assist in drawing up an investment mandate for the management of the assets backing the smoothed bonus product to be introduced by Lifeco.

i. Discuss the considerations that would inform your choice of the strategic asset allocation benchmark and outline any additional information you may require.
[8]

The product development actuary has also asked for advice on the investment related issues they need to consider if they want to introduce an immediate annuity product into the market.

ii. Set out the points you would make in response to the product development actuary's request.
[6]

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Your research has revealed that the government of Country X plans to introduce inflation targeting which, if successfully implemented, should result in a sustainable drop in inflation to low single digits.

iii. Explain how a move to a permanently low single digit inflation environment is likely to impact on the performance of each of cash, bonds, property and equities over both the short and long term. Your answer should include the impact on different sub-categories of each asset class for those asset classes where the impact may differ.

[30]

The product development actuary has enquired what the implications of such a move to a permanently low single digit inflation environment would be on the approach to managing the absolute return product during this transition period.

iv. Discuss how the investment management of the absolute return product might be affected by the changing environment.

[6]

[Total 50]

Question 2

You are the investment risk specialist at a large institutional asset management company. In the past the company has invested almost exclusively in listed equities and bonds. More recently it has been investing in a much wider variety of non-vanilla instruments including unlisted securities, derivatives and derivative-based securities and structured products.

The managing director believes that this trend is likely to continue, but has concerns that the risks inherent in these new investments are not being systematically identified and managed. He has asked you to propose a framework for assessing these risks prior to committing to an investment.

i. Briefly discuss the risks that you would need to consider. [15]

You propose that in keeping with the company's current practices, the fund manager who wishes to make such an investment will be responsible for a thorough initial analysis of the risks and investment merits. However, in addition to this, other areas should become involved to provide input, specialist expertise and oversight.

ii. Describe what role each of the following should play in the process leading to an investment decision and what documentation each should produce.
   a. The fund manager proposing to introduce the asset into her fund(s)
   b. The asset administration function
   c. The compliance function
   d. The investment risk management function
   e. The Chief Investment Officer

[25]

[Total 40]

Question 3

You are an actuary advising a defined contribution pension fund whose members belong to one trade union. A trustee has complained that many of the investment choices available to members incorporate foreign investments. She asserts that investing outside of South Africa is contrary to the members' interests.

i. Discuss the merits of this point of view and explain the rationale for foreign investments for members of such a fund.

[6]

Investment choices that include foreign investments have in the past tended to have allocations to this class at the maximum permitted by legislation. In the light of the Treasury's relaxation of exchange controls, the Chairman has enquired whether they should alter the mandates in line with the new limits.

ii. In this context discuss the implications of changes in foreign exchange controls for optimal portfolio allocation.

[4]

[Total 10]

END OF PAPER

