Actuarial Society of South Africa

EXAMINATION

27 May 2013 (am)

Subject F205 – Investment Specialist Applications

Time allowed: Three hours

INSTRUCTIONS TO THE CANDIDATE

1. Candidates will be issued with instructions to log-in using a password (which you will be provided with at the exam center).

2. Candidates are required to submit their answers in Word format only using the template provided.

3. Save your work continuously throughout the exam, on your computer's hard drive with which you have been provided.

4. 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.

5. You must not start typing your answers until instructed to do so by the invigilator/supervisor.

6. Mark allocations are shown in brackets on exam papers.

7. Attempt all questions, beginning your answer to each question on a new page.

8. Candidates should show calculations where this is appropriate.

Note: The Actuarial Society of South Africa will not be held responsible for loss of data where candidates have not followed instructions as set out above.

AT THE END OF THE EXAMINATION

Save your answers on the hard drive.

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 are an asset consultant to a life insurance company. The statutory actuary responsible for approving bonus rates for smoothed bonus products is concerned that the annual bonus declarations proposed by the product actuaries rely too heavily on current funding levels. He believes it would be helpful also to have a view on the valuation levels of assets in the markets generally.

For this reason he has sought your advice about using independent, preferably mechanistic, measures of the cheapness or dearness of markets to give context to the raw funding levels.

In the context of the actuary's requirements comment on the suitability of the following indicators when compared with their historic levels:

a) The price/earnings ratio of the FTSE/JSE SWIX All Share index as a measure of SA equity market cheapness or dearness.

[10]

b) The difference between long-term nominal SA Government bond yields less the inflation rate, and real Government bond yields as an indicator of SA bond market cheapness or dearness.

[5]

c) The dividend yield on the FTSE/JSE South African Listed Property index as a measure of SA property market cheapness or dearness.

[5]

Total Q1 [20]

Question 2

The Public Investment Corporation of South Africa (PIC) is responsible for investing the assets of Government institutions which include *inter alia* the Government Employees Pension Fund (GEPF) and the Unemployment Insurance Fund (UIF). The PIC currently has in excess of R1 trillion funds under management, of which the GEPF accounts for 90%.

For each Fund, the PIC must match the investment strategy to that required by the Fund's liabilities which would be defined by their respective trustees in consultation with an asset consultant. Assets are managed both internally and by outsourcing to private institutions to manage according to tailored mandates. The equities under management are managed 75% internally and 25% externally.

a) Discuss how the PIC's investment strategy may differ from that of a large private-sector investment house as a result of:
   i. The scale of its operations
   ii. The requirement that the PIC must promote the public good

[10]

b) Discuss the conflicts of interest and other governance risks that the PIC might face in pursuing its objectives, as a result of its ownership structure, its unique position in the asset management industry and the markets and its commitment to developing emerging managers.

[7]

The PIC has a strategy to develop and invest in local unlisted equity, and is considering the following options:

- Direct investments in projects or companies
- Co-investments and partnerships with institutions such as the Industrial Development Corporation (IDC) and the Development Bank of South Africa (DBSA)
- Investing in existing funds in a fund-of-funds approach
- Undertaking fund manager development

c) Comment on the merits and drawbacks of each approach.

[6]

Total Q2 [23]

Question 3

You are an actuary acting as an asset consultant to a large South African medical aid scheme. The medical aid scheme is an open scheme, meaning that its membership is open to the public. It has no linked employer or other sponsor and, therefore, no source of additional funds other than contributions levied on members of the scheme.

The Council for Medical Schemes in South Africa requires schemes to hold assets at least equal to 25% of annual contributions and certain investment restrictions apply to these particular assets. A summary of which assets would be recognised in calculating the solvency position of the scheme (and form what are called total "recognised assets") is as follows:

- Up to 100% in cash and near-cash instruments with SA banks and in SAFEX margin deposits, with limits per bank
- Up to 15% may be held in foreign bank accounts
- Up to 100% may be held in the debt of the SA Government, local authorities, specific state institutions and corporates. A limit of 20% applies to each state institution, 10% to each local authority and 10% to each corporate, other than if a bank, provided the debt is a constituent of the Other Bond Index (OTHI).
- Up to 15% may be held in foreign bonds
- Up to 10% in immovable property and securities backed by property with a limit of 2.5% in a single property or company.
- Up to 40% in equity (whether via funds or directly) with a limit of 2.5% in unlisted shares
- Up to 2.5% in inventories (at the smaller of book or realisable value)
- Up to 2.5% in assets not specifically referred to

The scheme is currently well funded from a regulatory perspective, having recognised assets equal to 30% of contributions. It also owns a shareholding in a property fund valued at 10% of the annual contributions which is not recognised due to the limitations described above. The fund's membership has a low average age relative to the industry, and therefore expects a lower claims experience.

a)
    i. Describe the attributes of the scheme's economic liabilities
    ii. Comment on how they are likely to influence the investment strategy.

[10]

The scheme currently invests its recognised assets in near cash instruments.

b) Suggest, with reasons, an investment allocation for the scheme taking into account the regulatory constraints mentioned above and discuss the issues involved in transitioning to that allocation.

[12]

The scheme has decided to engage with the regulator to lobby for changes in the investment restrictions for medical schemes and has asked you to make recommendations in this regard.

c)

  i. Discuss the limitations of the current regulatory framework for investments.
  ii. Propose, with reasons, improvements to the regulatory approach.

[5]

Total Q3 [27]

Question 4

Currently a notable feature of bond markets in the US, Germany, UK and Japan, *inter alia*, is that interest rates are at or near record low levels.

a) Describe the longer term trends and the dynamics over the past decade in those economies which have resulted in this phenomenon.

[15]

You are an advisor to a large South African pension fund. In its strategic asset allocation the fund allocates 5% of its assets to foreign bonds. This portion of the fund is invested in an ETF which tracks the performance of the Barclays Capital Global Aggregate Bond Index which provides a broad-based measure of the global investment grade fixed-rate debt markets.

The trustees have questioned the wisdom of investing in this asset class given the current economic and market conditions and have sought your advice.

b)

  i. Discuss the risks and limitations inherent in all aspects of the current investment approach in current market and economic conditions.

  ii. Discuss how the trustees might change the current arrangements in order to address these issues.

[15]

Total Q4 [30]

Total Paper 1 [100]

