

Actuarial Society of South Africa

EXAMINATION

19 October 2021

Subject F205 - Investment

Fellowship Applications

Time allowed: Three hours and fifteen minutes, plus an additional five minutes to allow for uploading your file in the ASSA Exam Platform

Total marks: 100

INSTRUCTIONS TO THE CANDIDATE

1. *Ensure that you are logged in and authenticated through Examity before you attempt the examination.*
2. *Ensure that you have your candidate number handy to input as part of the examination.*
3. *Questions are only available in the ASSA Exam Platform and may not be printed. Copy/paste of questions or parts thereof is only allowed between the Exam Platform and the Word answer document.*
4. *You will be provided with a Word template to access and use to complete your questions. You may only use the file provided to you. No other file from your PC may be accessed.*
5. *Ensure that your Candidate number appears in the Header of your Word template. [Select "Insert", then "Header", input your candidate number on blank header template and select "Close Header"]. DO NOT USE YOUR NAME OR MEMBER NUMBER ON YOUR ANSWER SCRIPT.*
6. *You may not use any other computer program (e.g. Email or Excel), nor open any other browser during the examination.*
7. *You may not make use of a Formulae and Tables book during the examination. Any such information that may be required will be provided to you within the examination.*
8. *You are strongly encouraged to use the first 15 minutes as reading time only, however, you may commence answering the paper whenever you are ready.*
9. *Mark allocations are shown in brackets.*
10. *Attempt all questions.*
11. *Show calculations where this is appropriate. You may use blank paper to carry out rough work calculations. You may use a calculator from the approved list only.*
12. *Upload your answer file into the ASSA Exam Platform BEFORE the examination time expires.*

13. *Once you have added your file, you MUST click on FINISH ATTEMPT to save your file. You will still be allowed to go back and make changes (REVIEW ATTEMPT) if you have time.*
14. *Once you are satisfied with your uploaded file, click **FINISH ATTEMPT** and **FINISH ALL AND SUBMIT** whereafter you will not be able to make more changes. Take this into account when finishing early - once you have submitted, you will not be able to make any more changes to your answers.*
15. *It is the candidate's responsibility to ensure that all work is submitted BEFORE the end of the examination time. Take this into account when planning your review and submission. There will be no time announcements.*
16. *An option to opt out of the exam will become available 1 hour after the official exam start time. If you select the Opt-Out option, you agree and understand that your entire script/answers will be deleted and cannot be retrieved at a later stage and that your script or part thereof will not be put forward for marking.*

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.

END OF INSTRUCTIONS

QUESTION 1

Placidia is a democratic, developing country (population 55m) with high levels of wealth and income inequality. Placidia has well developed financial institutions, deep, liquid financial markets and a large pool of privately funded retirement savings. Placidia has recently experienced a wave of public violence, which included widespread rioting, looting and destruction of private and public property. The damage wrought is extensive and unprecedented in Placidia's history. While the cause of the violence remains unclear, one credible explanation is the population's growing discontent with economic policy, which has failed to address widespread poverty.

- i. Outline, giving reasons, the likely impacts that the public violence would have had on the following Placidian institutions:
 - a. Defined contribution pension fund;
 - b. Life insurance company selling mainly risk (whole life assurance) products;
 - c. Bank.

[12]

As a response to the expected fall in economic output resulting from the destruction, Placidia's central bank has announced that it is to implement quantitative easing (QE) measures in the local financial markets.

- ii.
 - a. Describe what is meant by QE and how it is implemented by central banks. [4]
 - b. Describe its likely effects on the local financial markets, highlighting the possible risks it entails. [4]

[Total 20]

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QUESTION 2

A recent regulatory change in South Africa has resulted in private companies being permitted to participate in the limited generation, distribution and sale of up to 100MW of electricity without requiring a licence. You are the investment consultant to a large South African defined contribution pension fund. The fund has been approached by a large South African mining company seeking debt funding for a 100MW renewable electricity plant that it plans on building and operating on the site of one of its local mines. 75% of the electricity generated will be consumed by the mining company for its own operations, with the balance being sold to third parties.

The project will be housed in a special purpose vehicle (SPV), which will be 100% owned by the mining company. The SPV will issue senior unsecured bonds and mezzanine finance to investors. These bonds will be serviced exclusively from the cashflows generated by the SPV. The term of the senior bonds will be 20 years and they will carry a fixed annual coupon of 12% p.a. with a repayment of capital at maturity.

- i. Assess the appropriateness of the senior bonds on offer for the pension fund, describing the considerations and risks that should be taken into account.

[Total 14]

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QUESTION 3

You are the Chief Investment Officer of a newly-formed, independent multi-manager. You have been tasked with creating a suite of risk-profiled multi-manager portfolios for the institutional retirement fund market in South Africa.

- i. Discuss the key considerations in constructing and seeding the multi-manager portfolios.

[10]

The Head of Sales of the multi-manager suggests that, in selecting managers for the portfolios, you should favour equity managers with a particular style. Her reasoning is that this particular style has been outperforming other styles of investing for the past decade and so is what clients are most interested in. She suggests that you also incorporate a strong ESG focus within at least one of the portfolios to reflect the long-term philosophy of the multi-manager and to improve the marketability of the range of portfolios.

- ii. Outline the merits of a multi-manager portfolio consisting of a blend of different styles relative to a portfolio comprising of a single, dominant style.

[4]

- iii. Outline the practical challenges of incorporating ESG into multi-manager portfolios.

[5]

One of the directors of the multi-manager business is a strong proponent of tactical asset allocation. You are of the opinion that a static asset allocation is more appropriate.

- iv. a. Compare the two approaches to asset allocation from the point of view of a multi-manager.

[4]

- b. Discuss three ways in which dynamic tactical asset allocation can be incorporated into a multi-manager portfolio.

[9]

[Total 32]

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QUESTION 4

A South African life insurance company manages a smoothed bonus fund with fully vesting bonuses, which is available to individuals as an investment option within retirement annuity policies. You are the product manager of the smoothed bonus fund at the insurer.

- i. Describe the general features and nature of a typical smoothed bonus fund such as the one described above.

[10]

The newly-appointed investment manager of the portfolio underlying the smoothed bonus fund has performed a review of the portfolio, which has resulted in a decision to shift from an underweight to an overweight position in United States equities. You are concerned that US equities have performed very well recently and are currently significantly overvalued.

- ii. Outline the points you would make in a note to the investment manager to express your concerns, including the key questions you would ask the investment manager about the portfolio that might allay your concerns.

[6]

The situation in the United States is also of concern to the Chief Actuary, whose view is that a key risk is that the current very low real yields in the United States may revert to their long-term averages.

iii.

- a. Explain how you would calculate short-term and long-term real yields in the United States and in South Africa, including the indicators you would reference.

[3]

- b. Contrast current real yields in South Africa with those in the United States and discuss how these compare with their historical averages.

[6]

- c. Discuss the demographic and economic reasons for the decline in US real interest rates and indicate to what extent these factors are applicable to South Africa.

[9]

[Total 34]

[Grand Total 100]

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END OF EXAMINATION