

INSTITUTE AND FACULTY OF ACTUARIES

EXAMINATION

18 September 2023 (am)

Subject SA7 – Investment and Finance Specialist Advanced

Time allowed: Three hours and twenty minutes

In addition to this paper you should have available the 2002 edition of the Formulae and Tables and your own electronic calculator.

If you encounter any issues during the examination please contact the Assessment Team on T. 0044 (0) 1865 268 873.

1 You are working as the Chief Investment Officer of a hedge fund. The US macro team is adding an algorithmic trading element to their investment strategy. Specifically, they want to have a long bias when the words ‘dovish’ or ‘recession’ are dominant in market commentary narratives online and a short bias when the words ‘hawkish’ or ‘inflation’ are dominant.

‘Dovish’ is taken to mean that monetary policy is more inclined to be loosened, and ‘hawkish’ is taken to mean that monetary policy is more inclined to be tightened.

- (i) Describe why the team may consider this to be a sensible investment strategy. [6]
- (ii) Discuss some potential flaws with this strategy. [4]
- (iii) Explain how the team can analyse whether this algorithm may produce positive returns going forward. [7]
- (iv) Describe how this algorithmic strategy could be implemented in practice. [5]

A year after the strategy was implemented, one of the investment managers discussed it at an investment conference. A performance analyst has noted that the returns have subsequently fallen.

- (v) Suggest why the performance may have slipped. [2]
- [Total 24]

- 2 The investment committee of a large endowment is considering whether it should adopt a passive or active approach to investing in large cap equities (about \$10 billion in assets).

The Chief Investment Officer has commented that while a passive market capitalisation weighted approach to this asset class has produced favourable results with low costs, they expect active managers to outperform in the next few years due to changes in the market environment. Their key arguments are as follows:

- Equity returns in the past 10 years have been dominated by a small number of large cap growth stocks in the technology sector; however, returns over the next few years will be more balanced between growth and value stocks.
- With rising interest rates, growth stocks will suffer as their PE ratios will fall by more than the corresponding ratios of value stocks.
- A market capitalisation weighted approach will only hold small amounts of small cap equities and will only increase allocations to fast-growing stocks after they have experienced high growth.

- (i) Discuss the shortcomings in each of these arguments. [6]
- (ii) Give other reasons, in addition to those identified in part (i), why a passive market capitalisation weighted approach may outperform an active approach over the next 10 years. [6]

One of the members of the investment committee has suggested an alternative approach of building an equity portfolio using style-focused and sector-focused exchange traded funds. In their view, the foundation is well placed to construct such a portfolio and would benefit from the lower costs of these funds compared to actively managed funds.

- (iii) Comment on the advantages and disadvantages of such an approach compared to an active equity approach. [8]
- [Total 20]

3 A large UK insurer expects to write a significant amount of long-dated business, so it is looking to expand its holdings of long-dated illiquid assets. The insurer's asset manager is identifying suitable investments that will provide increased returns in the current low interest rate environment.

A senior portfolio manager has proposed investment in the private debt market.

(i) Outline the key features of private debt investment. [3]

(ii) Compare the advantages of private debt over public debt for the borrower and for the investor. [5]

(iii) Set out the process a rating agency follows when assigning issuer credit ratings. [7]

[Hint: consider the factors that ratings agencies assess to determine a company's rating.]

(iv) Explain, with examples, why the credit rating of a bond can be different to that of its issuer. [4]

An analyst in the insurer's capital modelling team has stated that for their team to perform capital calculations, all private debt assets must have a credit rating. The asset management team expects to purchase the following long-term assets over the next few months:

- **Construction infrastructure loans:** These will be loans made to small government entities, such as local authorities, to finance infrastructure projects such as toll roads. Loan repayments will be made once the assets under construction are fully operational.
- **Commercial real estate asset loans:** These will be loans made to operators of retail parks and leisure parks (e.g. restaurants, gyms), and secured against property leases.

(v) Explain, for each of the assets described above, the challenges that will need to be addressed to determine an appropriate credit rating. [11]

[Total 30]

4 The asset management team of a UK insurer has identified the following assets as potential investments:

- **Local authority income strip:** A local authority in the UK requires an investment of £250 million to fund the construction of a new office building. The investor will receive annual rental payments from the local authority for 45 years, which will increase in line with UK CPI subject to an annual floor and cap. The local authority will have the option to purchase the office building at the end of the contract for a nominal price of £1.
- **Credit tenant lease:** A professional landlord requires an investment of £100 million for the purchase of a large cinema complex located in a wealthy part of London. The landlord has signed a contract to rent the property to the largest film and entertainment group in Europe, subject to completion of the property purchase. Rents will increase annually in line with UK RPI and the loan would be repaid over a 30-year period by these rental payments only.
- **Infrastructure loan:** A small US mining logistics company requires an investment of 75 million USD to build a transportation network that will allow extracted minerals to be transported from mines to refineries. The network is being built for a mining company who are based and operate in Australia. The loan would be repaid over a period of 15 years, with payments made annually based on the value of the extracted minerals transported each year.

- (i) Explain, for each of the above investments, the key investment considerations for the insurer before investing. [18]
- (ii) Explain, for each of the above investments, asset pricing and capital modelling capability considerations. [8]
- [Total 26]

END OF PAPER