

INSTITUTE AND FACULTY OF ACTUARIES



EXAMINATION

12 April 2019 (pm)

Subject SA7 – Investment and Finance Specialist Advanced

Time allowed: Three hours and fifteen minutes

INSTRUCTIONS TO THE CANDIDATE

1. *Enter all the candidate and examination details as requested on the front of your answer booklet.*
2. *You must not start writing your answers in the booklet until instructed to do so by the supervisor.*
3. *Mark allocations are shown in brackets.*
4. *Attempt all questions, begin your answer to each question on a new page.*
5. *Candidates should show calculations where this is appropriate.*

Graph paper is NOT required for this paper.

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.

- 1** (i) Describe the main types of investment expenses or transaction costs that might be incurred by an institutional investor. Include examples. [4]

An individual investor is considering investing \$10,000 directly with an investment management organisation annually in advance for a term of 40 years. Assume a 7% per annum investment return on the underlying assets.

- (ii) Calculate the expected reduction in value on the accumulated fund at the end of the term under each scenario below where a management charge of:

- (a) 1%
(b) 0.5%

is levied on the fund at the end of each year. [6]

- (iii) Comment on your answers to part (ii). [1]

Alternatively, the investor is considering investing in a group savings scheme administered by their employer, whereby the assets are invested with an investment manager which levies a 1% annual management charge. The employer does not subsidise the scheme in any way and the scheme uses the services of external administrators and investment advisors resulting in additional costs.

- (iv) Discuss the impact of the additional costs on the expected investment proceeds, assuming the additional costs amount to 0.5% per annum of the value of the fund plus an annual account fee of \$250. [4]

Another individual investor has approached an investment consultancy for advice on whether to invest actively or passively. The investor is a 28-year-old professional who studied some finance modules while at university. The consultancy has already undertaken a basic investment fact find with the investor.

- (v) Discuss the factors that the consultancy should consider when constructing their advice. [10]

[Total 25]

- 2 A boutique investment manager actively manages a global long-short equity fund, dividing the global market into two regions, East and West, and into two styles, Value and Growth stocks.

The fund returns, relative to the market, for the calendar year 2018 were:

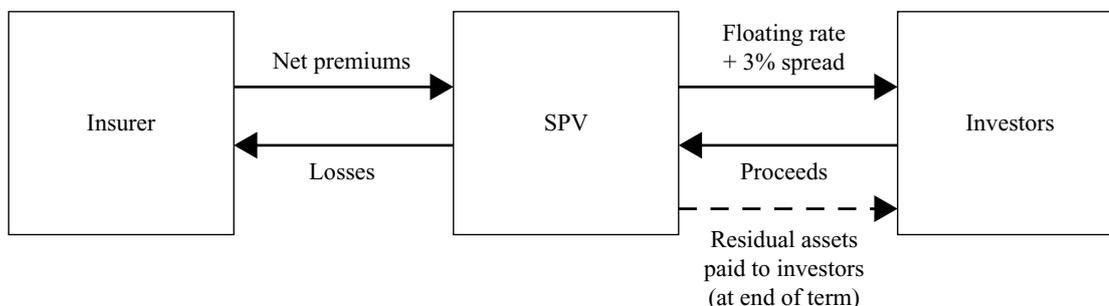
	<i>West</i>		<i>East</i>	
	Growth	Value	Growth	Value
Portfolio weight 1 January 2018	20%	30%	20%	30%
Portfolio value 1 January 2018 (\$m)	200	300	200	300
Portfolio value 31 December 2018 (\$m)	216	321	210	321
Weight in benchmark index	20%	20%	30%	30%
Total return index 1 January 2018	100	100	100	100
Total return index 31 December 2018	105	106	107	108

- (i) Determine the total alpha produced by the fund over the one-year period. [3]
- (ii) Perform an attribution analysis of the fund's alpha into:
- (a) regional allocation
 - (b) style allocation bias within each region
 - (c) stock selection. [9]
- (iii) Discuss why it is important for investors to perform style analysis on managers. [5]
- (iv) Describe conditions under which Value stocks might be expected to outperform Growth stocks and conditions under which the reverse is true. [9]
- (v) Outline two advantages and two disadvantages of being able to short equities within an actively managed fund. [4]
- (vi) Describe the issues involved in using performance measures based on mark-to-market valuations for investors with long-term horizons. [5]

[Total 35]

- 3 An insurer has written \$100m premium of insurance business across various product lines, with best estimate claims of \$70m. The insurer has entered into an external reinsurance treaty that will pay out all claims in excess of \$130m, for a premium of \$5m. The insurer has then transferred the net insurance premium and net liabilities into a special purpose vehicle (SPV) less a \$10m profit and distribution fee. The SPV's expenses will be covered by the insurer for a recharge cost of \$1m.

The SPV has sold floating rate notes to investors using the following structure:



- (i) Calculate the amount the SPV will need to raise from investors in the insurance linked security to enable it to ensure it can cover its potential liabilities. [1]
- (ii) Describe the risks investors in the SPV are exposed to. [4]
- (iii) Discuss the key drivers of the spread to the risk-free rate for the floating rate notes. [3]
- (iv) Suggest why investors might be willing to invest in an insurance linked security which in their view has a lower risk premium, net of fees, than listed equities. [3]

The following year the insurer is considering a similar structure but, rather than taking a \$10m profit and distribution fee, will charge a \$5m distribution fee and will receive 25% of the residual assets from the SPV at the end of the term. Additionally, the spread to the floating rate has been increased from 3% to 6%.

- (v) Comment on the advantages and disadvantages of this structure from an investor's point of view, giving an overall view on its attractiveness compared to the original structure. [5]

[Total 16]

4 A medium-sized passive investment management firm wants to evolve its business due to competitive pressures. The firm's costs are greater than some of its competitors' costs and it has begun to look at algorithmic trading platforms to try to reduce these costs.

(i) State the aims of an algorithmic trading platform. [3]

(ii) Describe two aspects of algorithmic trading platforms which can be quantitatively assessed. [7]

The firm is also considering moving into active management. Traditionally, the firm has had a culture which prized analytical thinking, rather than a culture focusing on creating narratives to be used in active management. The Chief Executive Officer (CEO) of the firm has concerns about a move into active management. The CEO believes that people are rational and considers active management to be a form of gambling.

The CEO has recently read a newspaper article which described an investor with very little knowledge or experience of investment who achieved very high investment returns over the past year and is now encouraging others to follow his lead. The CEO has asked you to provide a perspective from investment psychology.

(iii) Define the concepts of *Ego*, *Nous*, *Logos* and *Pyr*. [4]

(iv) Explain how *Ego* can lead to factually incorrect rationalisations. [3]

(v) Determine the likely extent to which the investor in the example above has engaged:

(a) *Nous*

(b) *Logos*.

[2]

(vi) Comment, using the concepts in part (iii), on the future investment prospects for this investor. [5]

[Total 24]

END OF PAPER