



SII MASTERS JUNE 2008 EXAMINATION

PORTFOLIO CONSTRUCTION THEORY

DATE OF EXAM	Wednesday 25 June 2008
3 HOURS	2.00 pm – 5.00 pm
RUBRIC	SECTION A – answer ALL parts of the question in this section SECTION B – answer ALL parts of the question in this section SECTION C – answer TWO questions in this section SECTION D – answer ALL parts of the question in this section SECTION E – answer TWO questions in this section

Candidates are reminded that no marks will be awarded for illegible work

NOTES TO CANDIDATES

1. Please insert your Candidate Number on each of the Answer Book covers. *Do not insert your name.* Please use **Answer Book 1** for Sections A, B and C. Please use **Answer Book 2** for Sections D and E.
 2. Show *all* workings in your Answer Book.
 3. Candidates may attempt the sections in any order. Please indicate clearly in your Answer Book which questions you are answering.
 4. Please insert in the box provided on the cover of your Answer Book the numbers of the questions you have attempted in the order in which they appear in the Answer Book.
 5. You may use the calculator provided or one approved by the Securities & Investment Institute.
 6. You must hand your Answer Book to an invigilator before you leave the Examination Hall. *Failure to do so will result in disqualification.*
 7. The decision of the panel is final and no correspondence will be entered into concerning the grade awarded.
 8. Once submitted, the examination scripts become the property of the Securities & Investment Institute and will not be returned to candidates.
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SECTION A**TOTAL 40 MARKS**

Answer ALL parts of the question in this section.

- 1 Investment management firm Tip Top manages an active and passive Europe, Africa and Far East (EAFE) equity portfolio for a large US pension scheme. The active portfolio's benchmark employs free float adjusted market capitalisation weights. Pinnacle's policy is to not allow the active portfolio weights to deviate by more than 15% from the benchmark weights. An internal review meeting is held to discuss performance to date and future strategy for the EAFE portfolios. Attendees at the meeting include the Chief Investment Officer, the fund managers and an inhouse statistician. The Chief Investment Officer is presented with Tables 1 and 2 below.

Market	Market weights	36 month return performance
Europe	0.7	15.30%
Far East	0.2	21.20%
Africa	0.1	11.10%

	Active Portfolio	Passive Portfolio	Benchmark
36 month return performance		17.10%	17.40%
Monthly standard deviation of returns	3.90%	3.65%	3.60%
Correlation of monthly returns relative to benchmark	0.82	0.99	1

The portfolio information contained in Tables 1 and 2 are total returns (i.e. dividends reinvested), net of fees and costs, US dollar denominated, and for a full 36 months. The benchmark has no fees or costs. At the meeting the statistician presents the output of an unconstrained optimisation for an Active EAFE portfolio. The optimiser software recommends the following market weights:

Far East 0.4
Africa 0.4
Europe 0.2

- a) What is the 36 month return for the active portfolio? (2 marks)
- b) What is the annualised standard deviation of returns for the active portfolio, passive portfolio and benchmark? (Show all workings) (3 marks)

- c) What is the annualised return for the active portfolio, passive portfolio and benchmark? (Show all workings) *(3 marks)*
- d) One of the fund managers would like the active portfolio to have a growth bias. What is the investment philosophy behind growth investing and how does it relate to thematic investing? *(4 marks)*
- e) One of the fund managers would like the active portfolio to have a value bias. What is the investment philosophy behind value investing and what is the difference between a value strategy based on informational inefficiency and a value strategy based on economic inefficiency? *(4 marks)*
- f) Why might an unconstrained optimisation on the EAFE benchmark suggest a fundamentally different allocation to the current active portfolio? *(5 marks)*
- g) What percent of the active portfolio's total risk is company specific? *(3 marks)*
- h) Write a short paragraph on each of the three indexation techniques that Tip Top might employ to construct its passive portfolio. *(7 marks)*
- i) What is a tracking error, and why would the US pension scheme client become more concerned as the tracking error on the passive fund moves further away from zero? *(5 marks)*
- j) Why will the standard deviation and the return of the passive portfolio not equal those of the benchmark, unless by chance? *(4 marks)*

(Total 40 marks)

SECTION B**TOTAL 20 MARKS****Answer ALL parts of this question**

2 Using the terms in a) to f) below, describe the effects of adding alternative asset classes to a conventional portfolio of equities and fixed income. Illustrate your answer with examples from private equity, infrastructure funds, commodities, and hedge funds:

- a) Expected return
- b) Diversification
- c) Risk
- d) Liquidity
- e) Divisibility
- f) Transaction costs (including fees)

(20 marks)

SECTION C**TOTAL 10 MARKS****Answer ANY TWO questions in this section. Each question carries 5 marks**

3 Mary Jeane, a professional portfolio manager, is about to meet David Tate, a new client who currently has a UK£700,000 portfolio. List as a series of points the investment planning process that Mary Jeane should undertake in order to construct a suitable investment portfolio for David Tate. *(5 marks)*

4 Assume you have the following information:

	Stock A	Stock B
Estimated return	12%	11%
Standard deviation of returns	8%	10%
Beta	1.5	1.0

Also assume that you expect the market and Treasury bills to return 10 percent and 4 percent respectively. Are stocks A and B underpriced or overpriced according to the Capital Asset Pricing Model (CAPM)? Show all workings. *(5 marks)*

- 5 a) What are the principal financial risks to a long term holder of gilt edged securities and a long term holder of UK corporate bonds of equal value and maturity?
- b) What are the principal financial risks to a holder of shares and bonds in the same company in which the interest rate risk of the bonds has been fully hedged?

Explain your answers.

(5 marks)

Answer ALL parts of the question in this section.

- 6 John has a wife, Mary, and three children, Andy, Billy and Cathy. Andy has a wife, Susie, and three children, Xavier, Yvonne and Zena. Billy and Cathy are both unmarried and have no children. All reside in the UK.

John, now aged 65, is a high net worth individual and has been a client of LMN Advisers for many years. He has recently made an appointment to discuss his retirement plans and to obtain some initial tax planning advice on his wealth portfolio.

John has been diagnosed with cancer and although the disease has been caught at its early stages he is fearful that it may shorten his life and needs to organise his affairs and prepare for the worst case scenario. John's assets include:

- Family home worth around £2m. This is jointly owned by John and Mary.
- Country Cottage in Spain worth around £750,000.
- Marks and Spencer Shares purchased on the following dates:

17 January 1985	at 85p per share	5000 shares
22 February 1988	at 118p per share	3000 shares
14 October 1992	at 212p per share	1000 shares
26 September 2000	at 422p per share	1000 shares
- Cash in bank £1,350,000 earning interest at 5%.
- Pension £100,000 a year payable from age 65.

John has sent a list of questions in advance of the meeting and asks your advice concerning a number of tax matters.

- a) How will sales of Marks and Spencer shares be taxed in the UK if John sells them in tranches of 2000 shares? *(4 marks)*
- b) What general inheritance tax planning advice can you give John relating to his asset portfolio? *(4 marks)*
- c) In relation to John's annual pension of £100,000, is there any income tax saving advice that you can give him? *(4 marks)*
- d) In relation to John's children and grandchildren, John is keen to establish a trust fund of £1,000,000 to cover any education, emergency financial and healthcare needs of his children and grandchildren, and any future grandchildren. What advice on establishing a trust can you give him and what are the long term tax advantages of using such a trust? *(4 marks)*
- e) What tax implications are there for John if he sells the Spanish cottage? *(4 Marks)*

Answer ANY TWO questions in this section. Each question carries 5 marks.

- 7 Mr T is a teacher and he received income from this profession in the year of £50,000. In addition, he received overseas income from two sources. He received £7,000 from the first source, after tax deductions of £3,000 in the overseas country. He received £13,000 from the second source, after tax deductions of £4,500 overseas. Mr T is single.

Calculate Mr T's UK tax liability for the year. *(5 marks)*

- 8 A non-business asset acquired in May 1988, at a cost of £38,000, is disposed of in June 2007 for £92,000.

Calculate the gain or loss. *(5 marks)*

- 9 Mrs B died on 1 December 2007, leaving shares worth £500,000. The executor sold for £27,000 some of these shares in XYZ plc, which were valued at £60,000 for probate purposes. Subsequently, some additional shares in ABC plc with a probate value of £38,000 were sold for £49,000. The commission and other dealing costs on the sales came to £800.

Calculate the revised probate value of the shares. *(5 marks)*