KASNEB

CIFA PART III SECTION 6

ADVANCED PORTFOLIO MANAGEMENT

PILOT PAPER

September 2015. **Time Allowed: 3 hours.**

Answer ALL questions. Marks allocated to each question are shown at the end of the question.

QUESTION ONE

(a) Explain how asset allocation policy is influenced by the following:

(i) Loss aversion. (2 marks)

(ii) Mental accounting. (2 marks)

(iii) Fear of regret. (2 marks)

(b) A perpetual foundation needs a 5% current distribution, expenses of 0.5% and expected general inflation of 2%. However, inflation relating to the foundation's distribution is 3%.

Required:

(i) Additive required rate of return. (2 marks)

(ii) Compounded required return. (2 marks)

(c) Suppose an investor requires before-tax return of 8%, has risk aversion score of 7 and she can invest in one of two portfolio allocations A or B, which meet her required return and risk (standard deviation) objectives. The allocations are as follows:

- Allocation A (Portfolio A) has an expected return of 8.5% and a standard deviation of 9%.
- Allocation B (Portfolio B) has an expected return of 8.8% and a standard deviation of 10%.

Required:

Determine the investor's utility in each portfolio allocation and advise the investor on which allocation to choose. (4 marks)

(d) Explain the strengths and weaknesses of mean-variance optimisation as an asset allocation approach. (6 marks)

(Total: 20 marks)

QUESTION TWO

(a) Outline three advantages and three disadvantages of enhanced indexing by small risk factor mismatches as a bond portfolio strategy. (6 marks)

(b) Regardless of strategy employed, a bond portfolio manager should be judged against benchmark and the benchmark should match the characteristics of the portfolio.

Describe the following considerations when selecting a benchmark:

(i) Market value risk. (2 marks)

(ii) Credit risk. (2 marks)

(iii) Income risk. (2 marks)

(iv) Liability framework risk. (2 marks)

(c) Paul Kite's portfolio consists of the bonds shown below:

Bond	Market value (Sh. '000')	Effective duration
I	370	4.5
II	420	6.0
III	210	7.8
Portfolio	1000	?

Required:

(i) The effective duration of Paul Kite's portfolio. (2 marks)

(ii) Interpret the significance of the above measure. (2 marks)

(d) An investor has Uganda shillings (USh.) 100 million and would like to institute a contingent immunisation strategy over the next six years. Current rates of return for immunisation strategies are 100% but the investor is willing to accept an 8.5% rate of return. This active strategy is to purchase KSh.100 million in 8% coupon semi-annually compounded 25-year bonds priced to yield 10%.

Required:

Determine the investor's cushion spread. (2 marks)

(Total: 20 marks)

QUESTION THREE

(a) Alex Otuoma, a portfolio manager at Beta Capital, has Sh.40 million of funds to invest. He borrows an additional Sh.100 million at 4% per annum in the hope of magnifying the rate of return on the portfolio.

Assume that the manager can invest all the funds at a rate of 4.5% per annum.

Required:

(i) The leveraged rate of return on the portfolio. (2 marks)

(ii) The rate of return on each component of the portfolio. (2 marks)

(b) Explain the following approaches to hedging the currency risk in an international bond investment:

(i) The forward hedge. (3 marks)

(ii) The proxy hedge. (3 marks)

(iii) The cross hedge. (3 marks)

(c) A portfolio manager is considering exchanging one bond issue for another that he believes is undervalued:

- The existing bond has a total market value of Sh.11 million with a price of Sh.160 and a duration of 8.
- The new bond has a duration of 10 and a price of Sh.180.

Required:

The par value of the new bond necessary to keep the duration of the portfolio constant. (3 marks)

(d) Two managers, Jerry and Tom, follow the stocks in a broad market index and have made independent forecasts. Jerry has made 400 independent forecasts and has an information co-efficient of 0.05. Tom has made 150 independent forecasts and has information co-efficient of 0.07.

Required:

(i) Each manager's information ratio. (2 marks)

(ii) The manager with the better performance. (2 marks)

(Total: 20 marks)

QUESTION FOUR

(a) Evaluation of portfolio performance heavily relies on benchmarks. Explain any five characteristics which these benchmarks must possess for them to be relevant. (10 marks)

(b) Weru has a 10-year bond in an actively managed portfolio. The bond has a market value of Sh.50 million and a duration of 4.7. The portfolio has a total value of Sh.200 million and a duration of 6.8. The basis point change is 100.

Required:
The percentage contribution of the bond's shilling duration to the portfolio's shilling duration. (4 marks)

(c) A portfolio manager must be aware of the risks that relate to market interest rates and the structure of the bonds in the portfolio.

Describe the following types of risks:

(i) Interest rate risk. (2 marks)

(ii) Contingent claim risk. (2 marks)

(iii) Cap risk. (2 marks)

(Total: 20 marks)

QUESTION FIVE

(a) With regard to international fixed income portfolio management, describe any three sources of excess return that a portfolio manager may use instead of passively overseeing the portfolio. (6 marks)

(b) Monsura, an investor uses a core-satellite approach to allocate funds amongst equity managers. The equity managers' active risk, active return and allocations are shown as follows:

	Active risk	Active return	Allocation
Enhanced indexing	1.7%	2.5%	45%
Active Manager X	1.9%	3.00%	25%
Active Manager Y	3.3%	5.5%	10%
Active Manager Z	3.9%	7.2%	5%
Passive index	0.00%	0.000%	15%

Assume that the correlation between the managers' active returns is zero.

Required:

(i) Describe the investor's core. (2 marks)

(ii) Determine the investor's active return. (2 marks)

(iii) Determine the investor's active risk. (2 marks)

(iv) Determine the investor's information ratio. (2 marks)

(c) Maryanne Ngeno plans to buy crude oil in one month to produce gasoline and heating oil for sale in two months. The 1-month futures price for crude oil is currently selling for Sh.18,000. The 2-month futures price for gasoline and heating oil per barrel are Sh.20,000 and Sh.23,000 respectively.

Required:
The 5-3-2 track (commodity) spread. (3 marks)

(d) Kamongo foundation entered into a 2-year credit default swap on a notional principal of Sh.100,000,000 of a 5-year bond issued by the matrix corporation. The swap specifies an annual premium of 55 basis points and cash settlement.

Assume that the matrix corporation defaults at the end of the first year, and the bonds are trading at 60 cents to the shilling.

Required:
Describe the cash flows associated with the credit default swap. (3 marks)

(Total: 20 marks)

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