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CIFA PART III SECTION 6

ADVANCED PORTFOLIO MANAGEMENT

THURSDAY: 29 November 2018. **Time Allowed: 3 hours.**

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

QUESTION ONE

(a) Evaluate three principles underlying tactical asset allocation. (6 marks)

(b) AMN Ltd. is considering freezing its defined benefit plan (DB) and migrating to a defined contribution (DC) plan. The DC plan would be funded by a combination of company and employee contributions, with immediate vesting for all employees.

Required:

Assuming AMN Ltd. migrates from DB plan to DC plan:

(i) Propose three advantages that would accrue to AMN Ltd. (3 marks)

(ii) Explain three advantages that would accrue to the employees of AMN Ltd. (3 marks)

(c) An analyst has gathered the following data about a portfolio for the month of September 2018:

	Sh.
	Sh."000"
Fair value, 31 August 2018	16,575
Cash contribution, 12 September 2018	2,265
Fair value, 12 September 2018*	19,550
Fair value, 30 September 2018	19,250

Note: * Includes cash contribution of Sh.2,265,000 received and available for investment on 12 September 2018.

Required:

(i) The approximate time weighted rate of return for the month of September 2018 using the modified Dietz formula. (3 marks)

(ii) The true time weighted rate of return for the month of September 2018. (3 marks)

(d) Latena Ltd. manages a broadly diversified portfolio of global investment grade and high yield corporate bonds for its client. Latena Ltd.'s fixed income research team consists of a portfolio manager and three credit analysts who review and manage the portfolio. The portfolio manager uses a top-down approach while the credit analysts use a bottom-up methodology.

Required:

Contrast the approach used by the portfolio manager and the approach used by the credit analysts. (2 marks)

(Total: 20 marks)

QUESTION TWO

(a) Assess four factors that could explain the sources of abnormal return in the performance evaluation of international portfolio managers. (4 marks)

(b) Benson Mogaka is a member of the investment committee of a local foundation with Sh.950 million in assets that supports medical research relating to malaria.

For the annual asset allocation review, Mogaka has prepared the following set of capital market expectations:

Asset class	Expected return (%)	Standard deviation (%)	Correlation 1	2	3	4
Domestic equities	8.6	20	1.00			
Non domestic equities	6.7	15	0.65	1.00		
Domestic bonds	4.1	10	0.34	0.25	1.00	
Real estate	5.0	12	0.50	0.35	0.17	1.00

Based on these capital market expectations, Mogaka has developed the following analysis:

Corner portfolios

Portfolio	Expected return (%)	Standard deviation (%)	Sharpe ratio	Asset class (Portfolio weight) 1 (%)	2 (%)	3 (%)	4 (%)
1	8.60	20.00	0.330	100.00	0.00	0.0	0.0
2	7.91	16.78	0.352	63.53	36.47	0.0	0.0
3	7.55	15.48	0.358	53.22	37.23	0.0	9.55
4	5.03	8.42	0.360	0.00	24.70	43.30	32.00
5	4.69	8.15	0.329	0.00	10.90	55.56	33.54

Additional information:

1. The local foundation's spending rate is 3.5%.
2. The expected long term inflation rate is 2.25%.
3. The cost of earnings investment returns has averaged 43.6 basis points annually.
4. The risk-free rate is 2.0%.

Required:

(i) Describe how corner portfolios arise. (2 marks)

(ii) Compute the local foundation's return requirement. (2 marks)

(iii) Recommend the strategic asset allocation that Mogaka should present for approval at the asset allocation review meeting. (6 marks)

(c) A summary of a portfolio manager's performance when compared to a benchmark is provided below:

Country	Benchmark weight	Return on equity index (%)	Currency appreciation (%)	Manager's weight	Manager's return (%)
A	0.30	10	10	0.35	8
B	0.10	5	–10	0.10	7
C	0.60	15	30	0.55	18

Required:

Determine the contribution of the following selections to overall performance:

(i) Currency selection. (2 marks)

(ii) Country selection. (2 marks)

(iii) Stock selection. (2 marks)

(Total: 20 marks)

QUESTION THREE

(a) Analyse four changes in investors circumstances that could necessitate the need for portfolio revision by the fund manager. (4 marks)

(b) An investor is holding a portfolio in the following classes of assets: Equities, Bonds, Cash, Property and Commodities. Upon reading his investment policy document you find the following information:

Asset	Allocation policy (%) Minimum	Maximum
Equities	20	40
Bonds	10	30
Cash	10	20
Property	5	25
Commodities	5	25

The average yield on the asset investments is also provided below:

Asset	**Average yield (%)**
Equities	15
Bonds	8
Cash	5
Property	20
Commodities	10

Currently, the investor has allocated his capital in the following proportions: 35% in Equities, 25% in Bonds, 10% in cash, 25% in property and 5% in commodities. The investor is however not sure whether this allocation provides the optimal return on his portfolio and has sought your advice on whether or not he should consider revising his allocation. He has provided you with the following suggested asset allocation from different investment analysts:

Investment Analyst	**Asset Allocation Advice (%)**				
	Equities	**Bonds**	**Cash**	**Property**	**Commodities**
A	40	10	15	25	10
B	38	20	12	20	10
C	30	25	10	25	10

Required:

(i) Expected return on the portfolio based on the current investment policy. (3 marks)

(ii) Evaluate the three pieces of investment advice provided to the investor and advise him whether to change the current asset allocation. (6 marks)

(c) The following performance attribution analysis is provided for three portfolio managers:

	Manager A (%)		**Manager B (%)**		**Manager C (%)**	
Actual return	19.1		17.0		12.6	
Benchmark portfolio	14.9		15.2		12.6	
Active management return	?	(99)	(?)	(53)	?	(3)
Component of returns:						
Market timing	–0.2	(40)	–0.6	(64)	–0.5	(73)
Industry exposure	0.2	(20)	–2.0	(89)	0.3	(34)
Sector emphasis	2.2	(99)	3.9	(99)	0.3	(51)
Security selection	1.9	(84)	0.6	(43)	0.1	(7)
Unreconciled return	0.1		–0.1		–0.2	

Note: The values in bracket denotes the confidence level.

Required:

(i) Calculate the active management returns for each portfolio manager. (3 marks)

(ii) Comment on the performance of each of the portfolio managers. (3 marks)

(iii) With specific reference to Manager A, is the performance attributable to skill or luck? Explain. (1 mark)

(Total: 20 marks)

QUESTION FOUR

(a) Describe three criteria that could be used by an investor while selecting a fixed income manager. (3 marks)

(b) Examine three active currency management strategies in the context of currency portfolio management. (6 marks)

(c) An investment manager manages a Sh.500 million corporate bond portfolio with a weighted average duration of 5 years. Over the course of the year, the investment manager turns over the portfolio 80% and pays an average bid-ask spread of 3 basis points.

Required:

Calculate the portfolio trading costs. (2 marks)

(d) The following information is provided about three portfolios and the market portfolio:

Portfolio	Expected return (%)	Standard deviation (%)	Beta factor
A	13	13	0.90
B	17	22	1.05
C	16	23	1.20
Market	14	20	–

The risk-free rate is 8%.

Required:
Evaluate the performance of the above portfolios using the following performance measures:

(i) Jensen's measure. (3 marks)

(ii) Treynor's measure. (2 marks)

(iii) Sharpe's ratio. (2 marks)

(iv) Information ratio. (2 marks)
(Total: 20 marks)

QUESTION FIVE

(a) Examine two approaches that a portfolio manager could employ to hedge currency risk in an international bond investment. (4 marks)

(b) A hedge fund consultant is approached by a hedge fund which is concerned with developing techniques to reduce negative skewness in a hedge fund investment return.

Required:
Analyse two techniques that could be used to reduce negative skewness in a hedge fund investment return. (4 marks)

(c) Outline three important characteristics of bond immunisation. (3 marks)

(d) A fund manager responsible for overseeing a Sh. 2 billion portfolio of government bonds expects the portfolio will earn a return of 8% over the next year. However, his client requires a one-year return of 10%. The manager believes he can enhance returns by leveraging the portfolio. He plans to borrow at an interest rate of 5% per annum and invest the proceeds in government bonds identical to those held in the portfolio. The duration of the bond portfolio is 10 and the duration of the borrowed funds is 1.

Required:
(i) The amount the manager needs to borrow to increase the one year return from 8% to 10%. (3 marks)

(ii) The duration of the leveraged portfolio. (3 marks)

(e) Hillary Langat, a stockbroker at Faida Stock brokerage services has the following quotation in his order management system:

Stock ticker	Trade size	Average Daily volume	Price (Sh.)	Speed (%)	Urgency
A	20,000	250,000	24.67	0.06	Low
B	50,000	125,000	12.18	0.45	Low
C	150,000	2,500,000	37.88	0.05	High

Required:
Discuss the appropriate trading strategy that should be used to place each order. (3 marks)
(Total: 20 marks)

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