Portfolio Management: Mock Exam 1 - Session 1 - Questions

Passage for Questions 1.1–1.3

TOPIC: PERFORMANCE MEASUREMENT
TOTAL POINT VALUE OF THIS QUESTION SET IS 12 POINTS

Last year, Celia Horne launched the Longacre Fund with a mandate to invest in companies that are perceived to be trading significantly below their intrinsic value. Over its first year, the fund generated a 14% return, which was 1.6% above the return on Horne's benchmark.

As the general partner in a limited partnership structure, Horne's compensation package is centered around a standard fee of 0.50% of assets under management (AUM). Horne's base fee is 0.20%, which she receives regardless of the fund's performance, and she earns a 25% share of the fund's excess return above its benchmark net of her base fee. Horne's annual compensation is capped at 0.80% of AUM and her incentive fee is subject to a high-water mark provision. When describing her compensation package to the fund's limited partners, Horne uses the analogy of call option positions.

Question 1.1

4 points

Discuss *one* benefit and *one* drawback of the Longacre Fund's high-water mark provision from the perspective of its limited partners.

Answer:

Question 1.2

4 points

Describe the call option positions that the Longacre Fund's limited partners have effectively taken with respect to Horne's fee structure.

Note: No calculations are required. Ignore the potential impact of the high-water mark.

Answer:

Question 1.3

4 points

Determine the minimum amount by which Horne must outperform the Longacre Fund's benchmark in order to maximize her annual compensation.

Answer:

Passage for Questions 2.1–2.4

TOPIC: PORTFOLIO MANAGEMENT
TOTAL POINT VALUE OF THIS QUESTION SET IS 12 POINTS

Tina Halverstrom manages the Magnolia Fund, which holds various combinations of long and short positions. Halverstrom's investment decisions are based on the premise that correlations revert to their long-term average. For example, if the correlation between two stocks with a historical correlation of 0.9 falls to 0.6, she will go long the underperforming stock and sell the other stock short. All of her decisions are made within the parameters of formal constraints, including value at risk (VaR) and conditional value at risk (CVaR).

Currently, Halverstam has taken three positions in the Magnolia Fund. Asset weights and return covariances are shown in the exhibits below.

Exhibit 1: Asset weights

	Portfolio	Benchmark
Asset A	47%	31%
Asset B	69%	55%
Asset C	-16%	14%

Exhibit 2: Return covariances

	Asset A	Asset B	Asset C
Asset A	0.021459	-0.003649	0.001415
Asset B		0.003706	-0.001336
Asset C			0.003626

Question 2.1

3 points

Halverstrom's strategy is *most* accurately described as:

A. factor timing.

B. a short squeeze.

C. statistical arbitrage.

Question 2.2 3 points

For the same time period, which of the following measures is *most likely* highest for the Magnolia Fund?

A. 1% VaR

B. 1% CVaR

C. 5% CVaR

Question 2.3 3 points

Which of the Magnolia Fund's positions *most likely* has the highest active share?

A. Asset A

B. Asset B

C. Asset C

Question 2.4 3 points

Asset A’s contribution to the Magnolia Fund's variance is *closest* to:

A. 0.00345.

B. 0.00582.

C. 0.00603.

Passage for Questions 3.1–3.4

TOPIC: ASSET ALLOCATION
TOTAL POINT VALUE OF THIS QUESTION SET IS 12 POINTS

Mary Whitman is a portfolio manager who works for Optimal Asset Management, a large firm that advises institutions and individuals on how to best manage their assets. Whitman prepares for a series of calls with clients next week.

Whitman prepares first to respond to a couple of questions raised in a previous phone call with Arthur Piccione, a wealthy investor who seeks tailored investment advice. Piccione stated that mean-variance optimization has its shortcomings, claiming that “In mean-variance optimization, the efficient portfolios tend to have asset allocations that span many asset classes when there are many investable choices. Also, mean-variance optimization does not address the presence of liabilities, as portfolios often exist to fund specific obligations.”

In drafting her reply to Piccione, Whitman states the following about alternatives to mean-variance optimization:

- Statement 1: “Reverse optimization estimates expected returns for forecasting.”
- Statement 2: “The Black-Litterman model allows investors to combine their forecasts with those derived from reverse-optimization.”

Next, Whitman prepares her response to Natalie Colbert, a lead portfolio manager of a large property and casualty (P&C) insurer. Colbert is primarily interested in liability-relative asset allocations and she asks Whitman to compare the benefits of using surplus optimization and the two-portfolio approach. Whitman responds with the following comment: “Conservative investors should use the two-portfolio approach. However, for an investor with a multi-period horizon, it is best to use surplus optimization.”

Whitman anticipates that Colbert will also ask about how asset-liability management applies at a large insurer within the context of enterprise risk management. Whitman notes that P&C insurers often assess their risk exposure using measures such as 1% value-at-risk or conditional-value-at-risk.