Financial Exam Help 123™

2025 Level III Mock Exam
Portfolio Management Pathway

Morning Session Sample Exam
Full Guideline Answers

©2024 Financial Exam Help 123™ All Rights Reserved

CFA Institute does not endorse, promote or warrant the accuracy or quality of Financial Exam Help 123™. CFA® and Chartered Financial Analyst® are registered trademarks owned by CFA Institute.

Question 1 relates to Derivative Securities – Core Curriculum

AJBWU Case Scenario

1.1 To achieve Degenek's target asset allocation and target betas, **determine** the action (buy or sell) and the number of small-cap equity futures contracts required.

Degenek wants to reallocate 30% of AUD 200,000,000 – AUD 60,000,000 – from large-cap equity to small-cap equity. To do this, he will, in essence, convert AUD 60,000,000 from large-cap equity to cash (with a beta of zero), then convert AUD 60,000,000 of cash to small-cap equity. He also wants to increase the beta on the small-cap equity allocation from 0.90 to 1.25.

To accomplish this, there are broadly three approaches Degenek can follow:

1. First reallocate the portfolio, then increase the beta of the resulting small-cap equity portfolio.
2. First increase the beta of the existing small-cap equity portfolio, then reallocate the portfolio.
3. Increase the beta of the existing small-cap equity portfolio and reallocate the portfolio simultaneously.

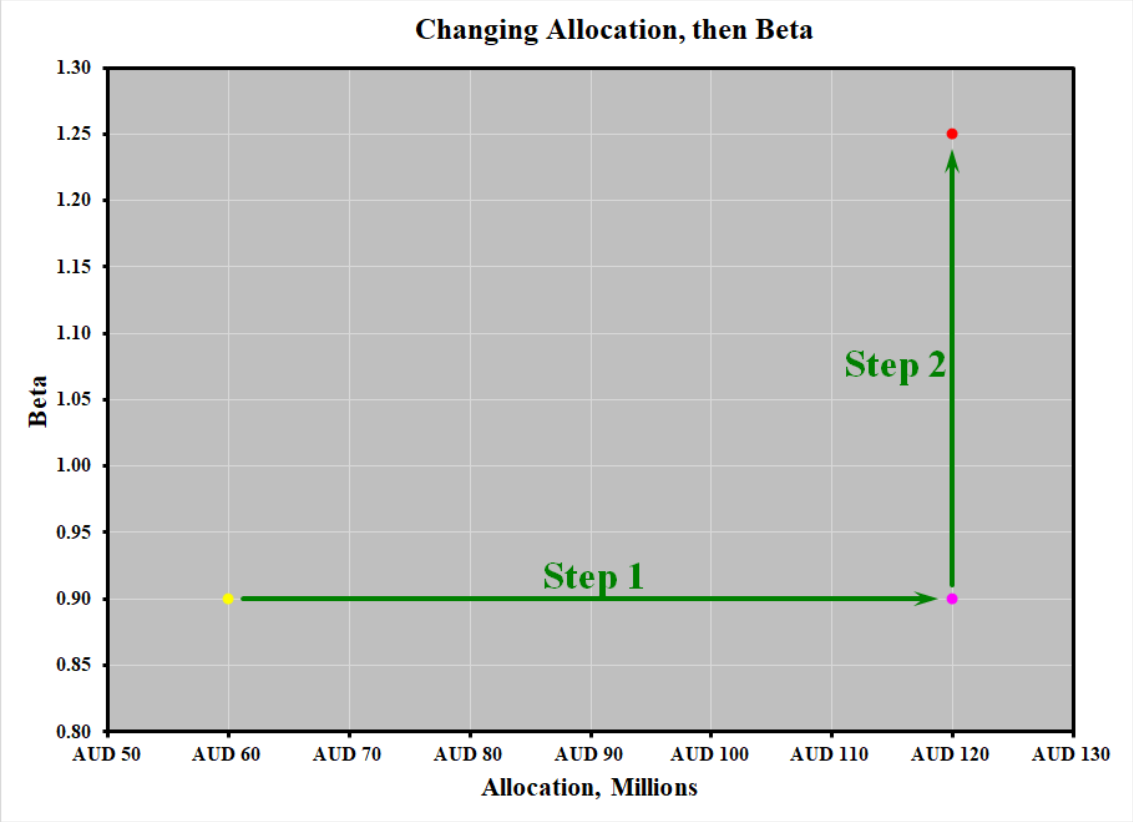
I'll cover all three approaches.

©2024 Financial Exam Help 123™ All Rights Reserved

CFA Institute does not endorse, promote or warrant the accuracy or quality of Financial Exam Help 123™. CFA® and Chartered Financial Analyst® are registered trademarks owned by CFA Institute.

Reallocation, then Beta

Graphically. changing the allocation, then changing the beta, looks like this:



Step 1: To change the allocation from AUD 60,000,000 (= AUD 200,000,000 × 30%) to AUD 120,000,000 (= AUD 200,000,000 × 60%), the number of small-cap equity index futures contracts that Degenek needs to execute is:

$$N_{sf} = \frac{S_T - S_P}{f_s} \times \frac{\beta_P}{\beta_f}$$

where:

N_{sf} = number of small-cap equity index (stock) futures contracts
S_T = target portfolio size (AUD 120,000,000)
S_P = existing portfolio size (AUD 60,000,000)
f_s = small-cap equity index (stock) futures price (AUD 104,000)
β_P = beta of the existing small-cap portfolio (0.90)
β_s = beta of the small-cap equity index futures contract (1.30)

©2023 Financial Exam Help 123™ All Rights Reserved

CFA Institute does not endorse, promote or warrant the accuracy or quality of Financial Exam Help 123™. CFA® and Chartered Financial Analyst® are registered trademarks owned by CFA Institute.

$$N_{sf} = \frac{S_T - S_P}{f_s} \times \frac{\beta_P}{\beta_f}$$

$$= \frac{\text{AUD } 120,000,000 - \text{AUD } 60,000,000}{\text{AUD } 104,000} \times \frac{0.90}{1.30} = \underline{\underline{399.41}}$$

Step 2: To increase the beta from 0.90 to 1.25 (on the new small-cap equity allocation of AUD 120,000,000), the number of small-cap equity futures contracts that Degenek needs to execute is:

$$N_{sf} = \frac{\beta_T - \beta_P}{\beta_f} \times \frac{S_P}{f_s}$$

$$= \frac{1.25 - 0.90}{1.30} \times \frac{\text{AUD } 120,000,000}{\text{AUD } 104,000} = \underline{\underline{310.65}}$$

The total number of small-cap equity index futures contracts that Degenek needs to execute is:

$$399.41 + 310.65 = \underline{\underline{710.06}}$$

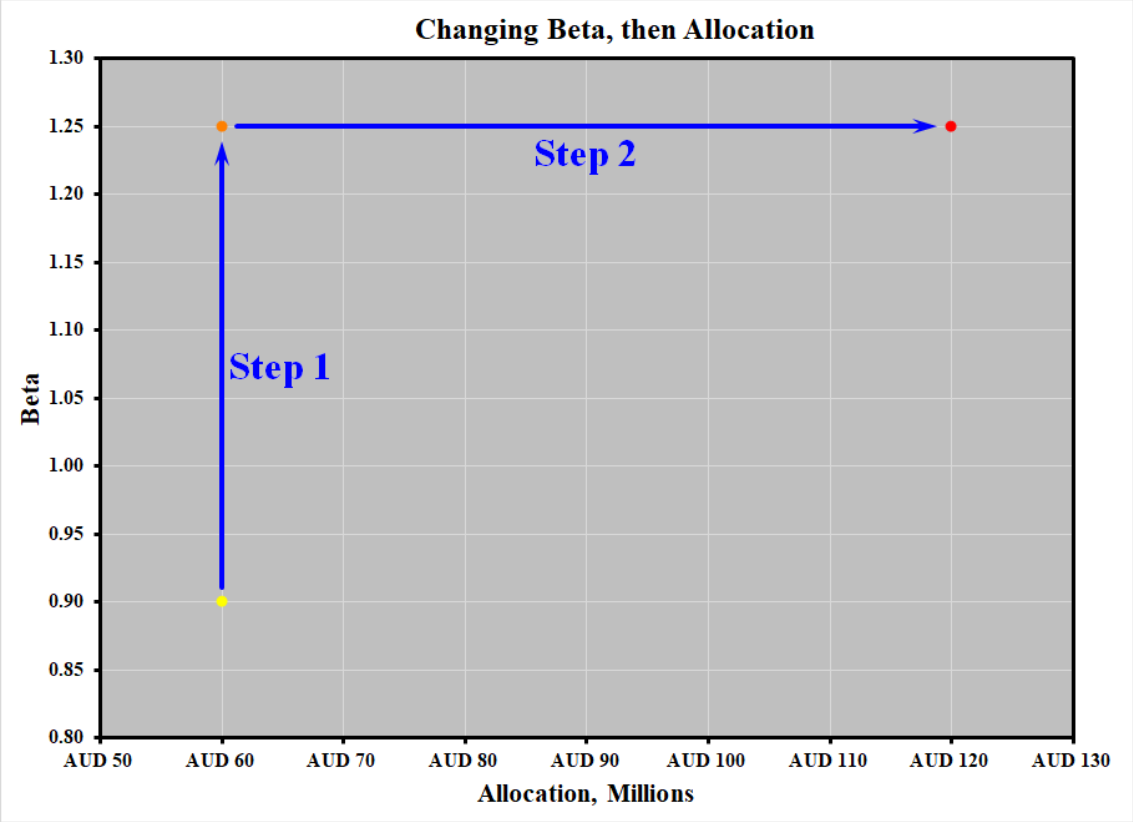
<u>Therefore, Degenek should buy (i.e., take the long position in) 710 small-cap equity index futures contracts.</u>

©2024 Financial Exam Help 123™ All Rights Reserved

CFA Institute does not endorse, promote or warrant the accuracy or quality of Financial Exam Help 123™. CFA® and Chartered Financial Analyst® are registered trademarks owned by CFA Institute.

Beta, then Reallocation

Graphically. changing the beta, then changing the allocation, looks like this:



Step 1: To increase the beta from 0.90 to 1.25 (on the existing small-cap allocation of AUD 60,000,000 (= 30% × AUD 200,000,000)), the number of small-cap equity futures contracts that Degenek needs to execute is:

$$N_{sf} = \frac{\beta_T - \beta_P}{\beta_f} \times \frac{S_P}{f_s}$$

$$= \frac{1.25 - 0.90}{1.30} \times \frac{\text{AUD } 60{,}000{,}000}{\text{AUD } 104{,}000} = \underline{\underline{155.33}}$$

©2023 Financial Exam Help 123™ All Rights Reserved

CFA Institute does not endorse, promote or warrant the accuracy or quality of Financial Exam Help 123™. CFA® and Chartered Financial Analyst® are registered trademarks owned by CFA Institute.

Step 2: To change the allocation from AUD 60,000,000 (= AUD 200,000,000 × 30%) to AUD 120,000,000 (= AUD 200,000,000 × 60%) on a portfolio that now has a beta of 1.25, the number of small-cap equity index futures contracts that Degenek needs to execute is:

$$N_{sf} = \frac{S_T - S_P}{f_s} \times \frac{\beta_P}{\beta_f}$$

$$= \frac{\text{AUD } 120,000,000 - \text{AUD } 60,000,000}{\text{AUD } 104,000} \times \frac{1.25}{1.30} = \underline{\underline{554.73}}$$

The total number of small-cap equity index futures contracts that Degenek needs to execute is:

$$155.33 + 554.73 = \underline{\underline{710.06}}$$

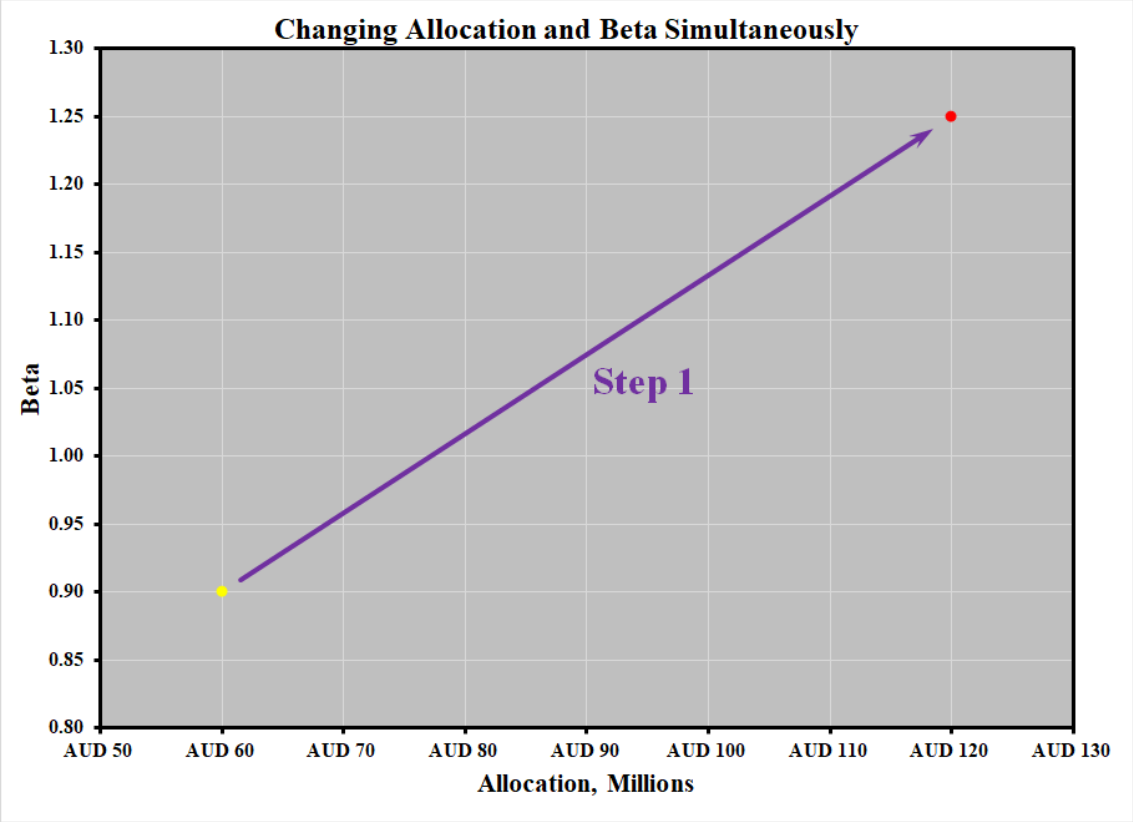
Therefore, Degenek should buy (i.e., take the long position in) 710 small-cap equity index futures contracts.

©2024 Financial Exam Help 123™ All Rights Reserved

CFA Institute does not endorse, promote or warrant the accuracy or quality of Financial Exam Help 123™. CFA® and Chartered Financial Analyst® are registered trademarks owned by CFA Institute.

Reallocation and Beta Simultaneously

Graphically. changing the allocation and beta simultaneously looks like this:



Step 1: The existing AUD-beta (money beta) of the small-cap portfolio is:

$$\text{AUD } 60,000,000 \times 0.90 = \text{AUD } 54,000,000$$

The target AUD-beta of the portfolio is:

$$\text{AUD } 120,000,000 \times 1.25 = \text{AUD } 150,000,000$$

The AUD-beta of a small-cap equity index futures contract is:

$$\text{AUD } 104,000 \times 1.30 = \text{AUD } 135,200$$

©2023 Financial Exam Help 123™ All Rights Reserved

CFA Institute does not endorse, promote or warrant the accuracy or quality of Financial Exam Help 123™. CFA® and Chartered Financial Analyst® are registered trademarks owned by CFA Institute.

The number of small-cap equity index futures contracts to execute to change the small-cap equity portfolio's value and beta is:

$$N_{sf} = \frac{\text{money-}\beta_T - \text{money-}\beta_P}{\text{money-}\beta_f}$$

$$= \frac{\text{AUD } 150,000,000 - \text{AUD } 54,000,000}{\text{AUD } 135,200} = \underline{\underline{710.06}}$$

Therefore, Degenek should buy (i.e., take the long position in) 710 small-cap equity index futures contracts.

©2024 Financial Exam Help 123™ All Rights Reserved

CFA Institute does not endorse, promote or warrant the accuracy or quality of Financial Exam Help 123™. CFA® and Chartered Financial Analyst® are registered trademarks owned by CFA Institute.

Allocation of marks:

6 marks for the correct answer (710 contracts, *buy* or *long position*)

If the answer is incorrect:

1 mark for the correct formula for increasing the allocation to small-cap equity

1 mark for the correct calculation of the number of contracts to increase the allocation to small-cap equity

1 mark for the correct formula for changing the beta of the resulting small-cap equity allocation

1 mark for the correct calculation of the number of contracts to change the beta of the resulting small-cap equity allocation

1 mark for correctly adding the numbers of contracts

1 mark for correctly interpreting the positive sign as buying / taking the long position

Reading:

Swaps, Forwards, and Futures Strategies

LOS: Demonstrate how interest rate swaps, forwards, and futures can be used to modify a portfolio's risk and return.

©2023 Financial Exam Help 123™ All Rights Reserved

CFA Institute does not endorse, promote or warrant the accuracy or quality of Financial Exam Help 123™. CFA® and Chartered Financial Analyst® are registered trademarks owned by CFA Institute.

1.2 **Identify** *one* alternative derivative strategy that Degenek could use to achieve his goals *instead of his proposed futures strategy*.

Synthetic futures using options

– or –

Total return equity swap

Identify the derivative security(ies) that Degenek would use, and **describe** his position (e.g., long, short, buy, sell, etc.) in *each* derivative security.

The short position in large-cap equity index futures can be created synthetically with a combination of a short position in large-cap equity index call options and a long position in large-cap equity index put options. To duplicate the futures position exactly, the strike price on the options would have to equal the large-cap equity index futures price.

The long position in small-cap equity index futures can be created synthetically with a combination of a long position in small-cap equity index call options and a short position in small-cap equity index put options. To duplicate the futures position exactly, the strike price on the options would have to equal the small-cap equity index futures price.

– or (respectively) –

The short position in large-cap equity index futures and the long position in small-cap equity index futures can be approximated with a total return equity swap. In this case, Degenek would enter into the swap to pay the large-cap equity return and receive the small-cap equity return on a notional value equal to the value that Degenek wants to reallocate from large-cap to small-cap.

A wrinkle in using the swap is that the notional value typically does not change over time, even though the values of the underlying equity portfolios will change over time. However, as swaps are custom derivatives, the details are open to negotiation; Degenek could negotiate to have the returns calculated on notional values that change over time.

©2024 Financial Exam Help 123™ All Rights Reserved

CFA Institute does not endorse, promote or warrant the accuracy or quality of Financial Exam Help 123™. CFA® and Chartered Financial Analyst® are registered trademarks owned by CFA Institute.

Allocation of marks:

2 marks for identifying the strategy of creating a synthetic futures position using options

1 mark for identifying the short position in large-cap equity call options

1 mark for identifying the long position in large-cap equity put options

1 mark for identifying the long position in small-cap equity call options

1 mark for identifying the short position in small-cap equity put options

– or –

2 marks for identifying the strategy of using an equity swap

2 marks for specifying paying the large-cap equity total return

(Less: **1 mark** for not specifying *total* return)

2 marks for specifying receiving the small-cap equity total return

(Less: **1 mark** for not specifying *total* return)

Reading:

Swaps, Forwards, and Futures Strategies

LOS: Demonstrate how equity swaps, forwards, and futures can be used to modify a portfolio's risk and return.

©2023 Financial Exam Help 123™ All Rights Reserved

CFA Institute does not endorse, promote or warrant the accuracy or quality of Financial Exam Help 123™. CFA® and Chartered Financial Analyst® are registered trademarks owned by CFA Institute.

Question 2 relates to Equity Investments – Portfolio Management Pathway

SGIA Case Scenario

2.1 Each of the correlations that Garcia asks Chirwa to calculate is *most accurately* described as a:

a. Transfer coefficient (TC)
b. Pearson information coefficient (IC)
c. Spearman information coefficient (IC)

The correlation between factor exposures and stock returns is known as the information coefficient (IC). When a correlation is calculated on calculated values of the exposures and the calculated values of the returns (rather than ranking the calculated exposures, ranking the calculated returns, and computing the correlation of the rankings), it is known as a Pearson correlation. Thus, Chirwa's calculation is a Pearson IC.

Answer a. is incorrect: the transfer coefficient measures the manager's ability to translate his or her insight into investment decisions; here, it would be the correlation between the factor exposures and the corresponding active weights the manager would implement for those exposures.

Answer c. is incorrect: the Spearman IC is the correlation between the ranks of the exposures and the ranks of the return values, rather than between their respective calculated values.

Reading:

Active Equity Investing: Strategies

LOS: Describe how quantitative active investment strategies are created.

©2024 Financial Exam Help 123™ All Rights Reserved

CFA Institute does not endorse, promote or warrant the accuracy or quality of Financial Exam Help 123™. CFA® and Chartered Financial Analyst® are registered trademarks owned by CFA Institute.

2.2 The futures position undertaken be Edathodika is *best* described as a:

a. Currency overlay
b. Completion overlay
c. Rebalancing overlay

A completion overlay is used when an index portfolio has drifted from its proper (or mandated) exposures. A common example is a portfolio that has a large cash balance (e.g., from a large cash contribution, or from accumulated dividends that have not been reinvested), causing the portfolio's beta to be significantly lower than desired. This is exactly the situation that Edathodika is addressing with the futures position.

Answer a. is incorrect: a currency overlay transforms the return in one currency into a return in a different currency (e.g., by using currency forwards, currency futures, or currency swaps). A common use of a currency overlay is to hedge the returns on holdings denominated in foreign currencies back to the home currency of the investor.

Answer c. is incorrect: although a rebalancing overlay is also used when a portfolio's exposures have drifted from their desired levels, it is used specifically in situations where some securities would need to be sold and others purchased, which is not the case here (no securities need to be sold). A common use for a rebalancing overlay is in a mixed equity/fixed income portfolio to return the equity percentage and the fixed income percentage to their desired levels, which would normally involve selling stocks and buying bonds or vice versa.

Reading:

Passive Equity Investing

LOS: Compare different approaches to passive equity investing.

©2023 Financial Exam Help 123™ All Rights Reserved

CFA Institute does not endorse, promote or warrant the accuracy or quality of Financial Exam Help 123™. CFA® and Chartered Financial Analyst® are registered trademarks owned by CFA Institute.

2.3 The *most appropriate* management styles for Benjamin to employ for the Kendall and Geneva portfolios, respectively, are:

	Kendall	Geneva
a.	Active	Passive
b.	Active	Active/Passive Mix
c.	Active/Passive Mix	Passive

Kendall's board do not believe that markets are efficient, so they believe that there are opportunities for active management. Their restriction against certain types of investments (military, alcohol, tobacco, gaming) also suggests an active approach. Furthermore, their benchmark is a broad market index of actively traded stocks, so an active strategy can take advantage of market liquidity. Finally, as they are likely to be exempt from taxes (most foundations are), an active strategy is not constrained by concerns about taxable gains. All these characteristics point to an active strategy.

Geneva's management prefer sector-specific portfolios with sector-specific benchmarks, for which a passive strategy is likely more appropriate (as these benchmarks may not be broad enough to allow scope for additional alpha). As they have no specific ESG goals, it's likely that they will not object to any specific investments contained in any of these benchmarks. Finally, life insurance companies are taxable, so an active strategy runs the risk of generating taxable gains, whereas a passive strategy is less likely to do so. All of these characteristics point to a passive strategy.

Reading:

Overview of Equity Portfolio Management

LOS: Describe rationales for equity investment across the-active management spectrum.

©2024 Financial Exam Help 123™ All Rights Reserved

CFA Institute does not endorse, promote or warrant the accuracy or quality of Financial Exam Help 123™. CFA® and Chartered Financial Analyst® are registered trademarks owned by CFA Institute.

2.4 The statements made by Álvarez and Mandouki are, respectively, *most likely*:

	Álvarez	Mandouki
a.	Correct	Incorrect
b.	Correct	Correct
c.	Incorrect	Incorrect

Álvarez' statement is correct:

- Suppose that you have a benchmark with 500 stocks, and a portfolio with 100 stocks. The Active Share is 80% (quite high), but if the portfolio is optimized to minimize tracking error (another name for active risk), then the active risk can be quite low, perhaps less than 2% annualized.
- Suppose that you have a benchmark with 500 stocks and that your portfolio holds 400 of those at the benchmark weights (totaling 80% of the portfolio weight). The Active Share is 20% (quite low). However, if the remaining 20% of the portfolio is invested in a stock whose returns are wildly different from those of the benchmark, it's possible that the tracking error (active risk) could be 10% or more annualized, which is rather high.

Mandouki's statement is incorrect. Active Share is controllable by the manager: the manager decides whether to overweight or underweight each security in the benchmark, and by how much. He is correct about active risk: the manager cannot control the returns on the securities held, which means that the manager cannot control active risk (except within extremely broad ranges).

Reading:

Active Equity Investing: Portfolio Construction

LOS c: Distinguish between Active Share and active risk and discuss how each measure relates to a manager's investment strategy.

©2023 Financial Exam Help 123™ All Rights Reserved

CFA Institute does not endorse, promote or warrant the accuracy or quality of Financial Exam Help 123™. CFA® and Chartered Financial Analyst® are registered trademarks owned by CFA Institute.

Question 3 relates to Fixed Income Investments – Portfolio Management Pathway

Korab Mountains Investments Case Scenario

3.1 **Identify** *two* factors that argue *in favor of* Strakosha's emerging bond investment, and *two* factors that argue *against* Strakosha's emerging bond investment, based *solely* on the information given.

Note: consider each factor separately.

In favor of: Factor 1

The ALL/UZA exchange rate is trading at a forward discount across all maturities. This suggests that the UZA risk-free rate is higher than the ALL risk-free rate across all maturities, which, in turn, suggests that an investment in a UZA-denominated sovereign bond will earn a higher yield than an investment in an ALL-denominated sovereign bond of the same maturity.

In favor of: Factor 2

The government's debt-to-GDP ratio is lower than that of comparable countries, suggesting that they have a better than average ability to repay their sovereign debt.

Against: Factor 1

Strakosha believes that interest rate parity underestimates the change that will occur in the ALL/UZA exchange rate. As it is trading at a forward discount, this means that she believes that UZA will depreciate vis-à-vis ALL more than interest rate parity suggests; i.e., the future spot ALL/UZA spot rate will be lower than the current ALL/UZA forward rate. Should this happen, the loss in the currency exchange rate will be greater than the gain from investing in higher yielding UZA bonds, leading to a lower return than would be achieved by investing in domestic (i.e., ALL-denominated) bonds.

Against: Factor 2

The government's budget-surplus-to-GDP ratio is lower than that of comparable countries, suggesting that it may have a worse than average ability to repay their sovereign debt.

©2024 Financial Exam Help 123™ All Rights Reserved

CFA Institute does not endorse, promote or warrant the accuracy or quality of Financial Exam Help 123™. CFA® and Chartered Financial Analyst® are registered trademarks owned by CFA Institute.

Allocation of marks:

1 mark for each correct factor in favor of the investment, up to two

1 mark for each correct factor against the investment, up to two

Reading:

Fixed-Income Active Management: Credit Strategies

LOS: Discuss considerations in constructing and managing portfolios across international credit markets.

©2023 Financial Exam Help 123™ All Rights Reserved

CFA Institute does not endorse, promote or warrant the accuracy or quality of Financial Exam Help 123™. CFA® and Chartered Financial Analyst® are registered trademarks owned by CFA Institute.

3.2 Given Kesarat's outlook, **determine** the *most appropriate* portfolio (Portfolio A, Portfolio B, Portfolio C) for the Endowment.

The most appropriate portfolio for the Endowment is Portfolio A.

Justify your determination.

Kesarat believes that the GBP yield curve is going to flatten over the next year; i.e., the short end will rise relative to the long end, and the long end will fall relative to the short end. With long maturity interest rates falling, Kesarat wants as much exposure as possible to the long end of the yield curve, where the bonds will have longer duration, and will, therefore, increase in value the most. Portfolio A, a barbell, has more exposure to the 10-year maturity than either Portfolio B (a bullet) or portfolio C (a ladder). Should Kesarat's expectation materialize, Portfolio A will perform the best of the three, Portfolio C's performance will be in the middle, and Portfolio B will perform the worst.

Allocation of marks:

1 mark for writing "Portfolio A"

2 marks for an appropriate justification for Portfolio A

For each portfolio not recommended:

1 mark for a correct reason that the portfolio is inappropriate

Reading:

Liability-Driven and Index-Based Strategies

LOS: Evaluate liability-based strategies under various interest rate scenarios and select a strategy to achieve a portfolio's objectives.

©2024 Financial Exam Help 123™ All Rights Reserved

CFA Institute does not endorse, promote or warrant the accuracy or quality of Financial Exam Help 123™. CFA® and Chartered Financial Analyst® are registered trademarks owned by CFA Institute.

3.3 Of the remarks made by Ayhan and Davies, **determine** whose is *more likely* to be accurate.

The remark made by Ayhan is accurate.

For the *inaccurate* remark, **identify** *one* inaccuracy.

Davies is inaccurate when he says that an immunizing portfolio will not require rebalancing when the yield curve experiences only parallel shifts. Even a well-designed (duration-matched) immunizing portfolio may require rebalancing in those circumstances, as over time the change in the duration of the portfolio may not match the change in duration of the liabilities it's meant to immunize.

Allocation of marks:

1 mark for writing "Ayhan"

2 marks for an appropriate identification of the inaccuracy in Davies' remark

Reading:

Liability-Driven and Index-Based Strategies

LOS: Evaluate strategies for managing a single liability.

©2023 Financial Exam Help 123™ All Rights Reserved

CFA Institute does not endorse, promote or warrant the accuracy or quality of Financial Exam Help 123™. CFA® and Chartered Financial Analyst® are registered trademarks owned by CFA Institute.