

# FinQuiz.com

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Level III of CFA Program

Item-set - **Question**

Study Session 5

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**FinQuiz Item-set ID: 134344****Questions 1 through 4 relate to Reading 12****Jacques Stephenson Case Scenario**

Jacques Stephenson is a senior officer at Mistline Financials (MF). Stephenson reviews the investment and rebalancing policy designed by Emily Thorns, a portfolio manager at MF, for the Petersons' investment portfolio. The exhibit below presents the policy:

**Exhibit:****Petersons' Investment Policy Statement**

<p>Details: Ralph and Sasha Peterson, aged 55 and 52, respectively, are a maximum of ten years away from retirement. Ralph is a graphic designer and Sasha is a visual artist. The total present value of their expected savings till retirement is \$2.5 million and the present value of pension income is \$1.8 million.</p>
<p>Investment objectives: The Petersons would like their portfolio to finance:</p> <ul style="list-style-type: none"> <li>• their son's university education in two years' time. The estimated present value of tuition costs is \$85,000.</li> <li>• A charitable donation to a cancer foundation on retirement. The present value of donation proceeds is estimated at \$200,000.</li> <li>• Their post-retirement living expenses which have a present value of \$3.2 million. Their current salary comfortably covers their pre-retirement lifestyle.</li> <li>• The couple would like to purchase a yacht one year from today. The present value of the total purchase costs is \$265,000.</li> </ul> <p>Apart from the yacht purchase, the couple attaches a high probability to realizing their investment objectives.</p>
<p>Risk objectives: The couple has an above average risk tolerance.</p>
<p>Liquidity: Sasha is particularly averse to illiquid asset classes believing them to be waste of portfolio funds.</p>
<p>Tax Concerns: The Petersons' income is subject to a tax rate of 35%.</p>
<p>Investments: The couple's total investment funds of \$800,000 are allocated as follows:</p> <ul style="list-style-type: none"> <li>• 30% domestic equity</li> <li>• 25% fixed income</li> <li>• 20% residential real estate</li> <li>• 15% domestic private equity</li> <li>• 5% global equity</li> <li>• 5% cash</li> </ul>
<p>Additional information: The couple owns a home which is currently worth \$800,000. Mortgage debt related to the home is \$355,000.</p> <p>The couple has recently filed a lawsuit against a fittings manufacturer for faulty product design. They are highly likely to win the lawsuit. The estimated present value of damages payable to them is \$1.2 million. Legal fees payable by the couple amount to \$600,000.</p>

Stephenson advises Thorns that the current asset allocation is poorly designed and to consider a goals-based approach. In describing the approach to Thorns, Stephenson states, “The goals-based approach ensures that the portfolio funds an investor’s legal and quasi-obligations after considering the required probability of success and time horizon for each obligation. Risk is stated in terms of the probability of failing to achieve investment objectives.”

When evaluating Thorns’ rebalancing policy, Stephenson notes that she has employed the percent-range rebalancing approach and sets the widest corridor width for rebalancing private equity.

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*FinQuiz Question ID: 134347*

1. Considering the information presented in the exhibit, the Petersons’ economic net worth is equal to:
  - A. \$495,000.
  - B. \$2,395,000.
  - C. \$2,995,000.

*FinQuiz Question ID: 134348*

2. The application of the goals-based approach to the current asset allocation will warrant a:
  - A. lower allocation to equities.
  - B. higher allocation to fixed-income.
  - C. lower allocation to domestic private equity.

*FinQuiz Question ID: 134349*

3. Is Stephenson’s description of the goals-based approach accurate?
  - A. Yes.
  - B. Only with respect to risk objectives.
  - C. Only with respect to investment objectives.

*FinQuiz Question ID: 134350*

4. Which of the following reasons can *least likely* be attributable to the corridor width employed for private equity?
  - A. Illiquidity
  - B. High transaction costs
  - C. Low correlation with the rest of the portfolio

**FinQuiz Item-set ID: 134678****Questions 5 through 10 relate to Reading 12****South Brookes Case Scenario**

Trudo Wilson, CFA, is a portfolio manager at South Brookes Associates. Wilson is providing investment management advice to Paul and Grace Yuto, a young married couple. The Yutos hired Wilson as their portfolio manager twelve months ago. Exhibit 1 presents the economic balance sheet prepared by Wilson for the couple using the goals-based approach while Exhibit 2 presents selective probabilities and time horizons for attaining the couple's key goals. Exhibit 3 summarizes two sub-portfolios Wilson has designed to achieve the goals outlined in Exhibit 2 as well as the baseline asset allocation for achieving goals with a moderate risk/return profile.

**Exhibit 1:  
Economic Balance Sheet for the Yutos**

<i>Assets</i>	<b>\$ 000s</b>	<i>Liabilities</i>	<b>\$000s</b>
Financial assets	45	Financial liabilities	22
Extended assets		Extended liabilities	
Present value of lifetime earnings	15	Present value of children's college education expense	10
Present value of litigation-related receipts	8	Present value of Paul's mother's medical expenses	5
		Present value of future consumption needs	7
		<i>Economic net worth</i> (Economic assets – Economic liabilities)	24
Total	68	Total	68

**Exhibit 2:  
Selective Probabilities for Achieving Couple's Goals**

<b>Goal</b>	<b>Probability of Achieving Goal</b>	<b>Time Horizon for Goal*</b>
I: Children's college education	90%	10 Years
II: Funding Paul's mother's future medical care	45%	Lifelong
III: Purchasing a yacht	20%	1 year

\*Time horizon starts today when time = 0 years and represents the point in time when the goal is required to be achieved

**Exhibit 3:  
Baseline and Sub-Portfolios for Achieving Goals**

Asset Class	Baseline Portfolio	Sub Portfolio for Goal I	Sub Portfolio for Goal II
Cash*	-	10	5
Equities*	60	30	63
Fixed-income*	40	53	13
Private equity**	-	-	5
<b>Real estate category:**</b>			
Hedge funds	-	2	7
REIT investments	-	5	7

\*Asset classes have a low correlation with other asset classes in the portfolio

\*\*Have a strong negative correlation with the rest of the portfolio

In explaining the asset classes to the couple, Wilson states that he has deliberately focused on specifying the asset classes as broadly as possible as opposed to relying on narrowly defined subgroups.

After designing the allocation, Wilson evaluates the structure. He realizes that his design is limited because his analysis has not explicitly incorporated the portfolio's exposure to key economic factors such as inflation, interest rate volatility, and GDP growth. He would now like to employ an approach which pays specific attention to the fact that economic factors often overlap.

Wilson has always relied on a global market portfolio as a benchmark for all his client portfolios and does the same for the Yutos. When asked why he prefers such a broad benchmark, Wilson justifies his choice with the following reasons:

Reason 1: Reflects the balancing of supply and demand across world markets.

Reason 2: Encourages investors to place a higher priority on familiar, publically traded domestic investments compared to foreign, privately traded investments.

Reason 3: Given the relative ease of information availability, estimating the size of each asset class on a global basis is a relatively straightforward exercise.

*FinQuiz Question ID: 134679*

5. Using the data in Exhibits 2 and 3, is the sub portfolio assigned by Wilson for Goal I appropriate?
- A. Yes.
  - B. No, the allocation to cash is low considering a desired 90% probability of occurrence.
  - C. No, the equity allocation should be higher than the baseline portfolio given that a long-time horizon represents a greater ability to take risk.

*FinQuiz Question ID: 134680*

6. Which of the following portfolios will be *most* suitable for funding the yacht purchase?
- A. Sub portfolio I
  - B. Sub portfolio II
  - C. Baseline portfolio

*FinQuiz Question ID: 134681*

7. Which of the following asset class specification criteria has Wilson violated in designing the baseline portfolio and sub portfolios?
- A. Asset classes should be diversifying
  - B. Asset classes should be homogenous
  - C. Asset classes should be mutually exclusive

*FinQuiz Question ID: 134682*

8. An advantage of Wilson's stated approach of specifying broad asset classes as opposed to narrowly defined subgroups is that the former:
- A. has fewer risk source overlaps in optimization.
  - B. are more effective in achieving an asset owner's objectives.
  - C. will more closely reflect a preponderance of world investable wealth.

*FinQuiz Question ID: 134683*

9. To achieve exposure the desired exposure to economic factors, Wilson should rely on:
- A. simulation techniques.
  - B. multifactor risk models.
  - C. mean variance optimization techniques based on asset class specification.

*FinQuiz Question ID: 134684*

10. Which of the following reasons *most* accurately supports Wilson's choice of the global market portfolio as a benchmark?
- A. Reason 1
  - B. Reason 2
  - C. Reason 3

**FinQuiz Item-set ID: 134685**

Questions 11 through 14 relate to Reading 12

**Brookes Asset Management Case Scenario**

Tina Marshall, CFA, is a senior portfolio manager at Brookes Asset Management. Marshall holds a meeting with Nathan Storm whose investment portfolio is being managed by Marshall. The purpose of the meeting is to review Storm's current financial condition and evaluate the need for rebalancing the client's portfolio. Marshall discusses the importance of rebalancing with Storm:

“Rebalancing is fundamentally a contrarian investment approach. Never rebalancing can negate an intended level of diversification by causing assets with low expected returns to dominate an investment portfolio.”

Next, Marshall evaluates Storm's current strategic asset allocation in light of his portfolio's rebalancing ranges. The exhibit below summarizes the ranges for each asset class in his portfolio.

**Exhibit: Rebalancing Ranges for Storm's Portfolio**

Asset Class	Rebalancing Range
Domestic equity	± 10%
Foreign equity	± 12%
Global fixed income	± 7%
Real estate	± 15%
Private equity	-5% to +30%

Storm's cousin is also a client of Marshall's. Unlike Storm, his cousin is an active and informed investor who holds specific expectations concerning the capital market. Storm wonders why his cousin's portfolio has wider rebalancing ranges compared to his own portfolio and suspects that the latter's capital market expectations could be the underlying reason.

*FinQuiz Question ID: 134688*

11. Marshall's explanation of the rebalancing discipline to Storm is *most likely*:

- A. accurate.
- B. inaccurate; rebalancing is a momentum investment approach.
- C. inaccurate; never rebalancing can lead to asset classes with high expected risk and return to dominate the portfolio.

*FinQuiz Question ID: 134689*

12. Using the data in the Exhibit, which of the following factors explains the asymmetric rebalancing range observed for private equity?
- A. Illiquidity
  - B. Tax considerations
  - C. Presence of derivatives

*FinQuiz Question ID: 134690*

13. Using the data in the Exhibit, which asset class has the highest transaction cost?
- A. Real estate
  - B. Private equity
  - C. Global fixed income

*FinQuiz Question ID: 134691*

14. Which of the following capital market expectations produces wider rebalancing ranges?
- A. Momentum
  - B. Mean reversion
  - C. Capital markets are efficient

**FinQuiz Item-set ID: 134692**

**Questions 19(134693) through 24(134698) relate to Reading 12**

**Doyce Asset Management (DAM) Case Scenario**

Norma Watts is a portfolio manager serving Doyce Asset Management (DAM), an asset management firm situated in the emerging market country of Zaelo. Watts manages the policy portfolio of Guinness Fund which has been established by Zaelo's government authorities to fund the extraction of mineral reserves. Watts has summarized the following facts concerning the fund and investment portfolio:

- The present value of expected revenue from the sale of mineral reserves is ZL 50 million
- Zaelo's government operates under constrained financial conditions and mineral extraction is an expensive process. At present the fund holds ZL 22 million in external borrowings.
- Guinness Fund's financial assets are currently worth ZL 80 million
- All investments are tax-exempt
- Revenue generated from the fund will be used to fund local infrastructure development. The present value of distribution amounts is estimated at ZL 15 million.
- Infrastructure costs are expected to grow at an inflation rate of 2% per year for the next fifteen years.

The current allocation for the fund is 50/50 equity and fixed-income, respectively. Watts is considering a reallocation of assets and is evaluating the asset-only and liability-relative approaches for the purpose. Exhibit 1 summarizes data relevant to the current and proposed allocations.

**Exhibit 1: Current and Proposed Asset Allocations**

	Current Allocation	Proposed Asset Allocations		
		A	B	C
<b>Equity:</b>				
Domestic (%)	50	30	30	25
Foreign (%)	-	20	25	25
Total equity (%)	50	50	55	50
Fixed income (%)	50	30*	15	25*
Diversifying strategies (%)	-	20	30	25
Sharpe ratio	0.450	0.652	0.788	0.700
Volatility (%)	12	15	18	17

\*Securities match liability risk exposures

After considerable deliberation, Watts selects the liability relative approach for revising the strategic asset allocation and selects allocation A based on the following factors:

Factor 1: Fixed-income investments match liability risk exposures

Factor 2: Fixed-income securities are equal to ZL 24 million and thus exceed the fund's financial liabilities of ZL 22 million.

Factor 3: Sharpe ratio is higher than the current allocation

Borris Smith is one of Watts' subordinates managing the diversified strategies allocation. Exhibit 2 outlines the total allocation to each security type within this category as well as the tracking risk and active share of each security relative to a selected benchmark index.

**Exhibit 2: Allocation, Tracking Risk and Active Share of Diversified Strategies' Securities**

	Allocation (%)*	Active Share (%)	Tracking risk (%)
Private equity	15	-	-
REIT	30	17	4.5
Hedge funds	10	8	8.8
Commodities	45	38	12.7

\*Includes both passive and active share components relative to the benchmark index

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*FinQuiz Question ID: 134695*

21. The economic net worth for the Guinness Fund is equal to (in millions):

- A. ZL 58.
- B. ZL 93.
- C. ZL 108.

*FinQuiz Question ID: 134696*

22. Using the data in Exhibit 1 and information provided on the Guinness Fund, the *most* appropriate asset allocation for the portfolio based on the asset-only approach is:

- A. A
- B. B
- C. C

*FinQuiz Question ID: 134697*

23. In context of the three factors identified by Watts, which of the following *most* strongly favors Allocation A for the liability-relative approach?

- A. 1
- B. 2
- C. 3

*FinQuiz Question ID: 134698*

24. Based on the data in Exhibit 2, which asset class is *least likely* being managed using an unconstrained, index-agnostic approach?

- A. REIT
- B. Hedge funds
- C. Private equity