2019 CFA® Exam Prep

Level III

Essay Exam Completion Portfolio®

This document was developed by IFT and should be used in conjunction with the **2014** Level III essay exam published by CFA Institute.

The following questions from the 2014 Level III essay exam are no longer relevant for 2019:

- Question 3
- Question 5, Part C.
- Question 7
- Question 8 – Not Included in this sample
- Question 10, Part A and Part B – Not Included in this sample

Instructions:

- Print the 2014 Level III essay exam.
- Remove or cross out questions that are no longer relevant.
- Replace them with questions in this document.
- Give yourself three hours and take the exam.

QUESTION 3 HAS FOUR PARTS (A, B, C, D) FOR A TOTAL OF 17 MINUTES.

Miray Wealth Management is a global investment management company based in California, USA. Rachel Portman, equity analyst at the firm meets with Zac Levin, equity investment manager at Miray, to discuss his portfolio. Levin's portfolio consists of several dividend- paying stocks, and he is interested in generating additional income to enhance the portfolio's total return besides the regular dividends he receives. Portman suggests dividend capture to Levin. She states, "Dividend capture will involve purchasing stocks right before their ex- dividend dates, holding the stocks through the ex- dividend date to earn the right to receive the dividend, and subsequently selling the shares."

While discussing several revenue incremental strategies, Portman cautions Levin, "Portfolio stocks may be used to generate incremental revenue, and partially offset administrative costs but there is always a possibility of introducing undesirable counterparty and collateral risks."

A. **Describe** potential sources of additional income other than "regular dividends" and "dividend capture" for Levin's equity portfolio.

(6 minutes)

B. **Identify** from the following choices the incremental revenue approach that has both counterparty and collateral risks. **Justify** your response.

i. Futures.
ii. Securities Lending.

(2 minutes)

Levin has received new funds from a client with a preference for passive exposure to equity market. Levin reviews the client's request who prefers a benchmark for the domestic stock allocation that holds all sectors (based on GICS) of the U.S. equity market. In addition, the client seeks investment in highly liquid, well- known stocks. He also specifies that any stock purchased should have a relatively lower beta, lower dividend yield, higher price momentum, higher P/E, and EPS growth. Portman and Levin agree that an alternative to direct equity investments should be considered. Portman suggests that the new equity portfolio be composed of the exchange-traded funds (ETFs) shown in Exhibit 1.

Exhibit 1: Selected Data of Equity ETFs

Equity Benchmark	ETF Ticker	Number of Constituents*	Equity Beta	12-month Trailing Dividend Yield	P/E	3 -5 Year EPS Growth	Fund Expense Ratio

S&P 500	SPYG	297	0.98	1.43%	29.90	15.29%	0.04%
Russell 3000	IWV	3,000	1.01	1.57%	22.30	15.73%	0.20%

[*] *This represents the number of holdings in the fund not the index.*

C. **Select** the *most appropriate* U.S. equity index benchmark from the following choices which satisfies the client's security selection guidelines:
i. large- capitalization with a value tilt.
ii. small- capitalization with a core tilt.
iii. large- capitalization with a growth tilt.

Justify your response.

(4 minutes)

D. Based on Exhibit 1, **determine** which fund (SPYG or IWV) assuming full-replication indexing would *most likely* have the higher expected tracking error. Support your response with *two* reasons.

(5 minutes)

Answer Question 3-A on This Page

Describe potential sources of additional income other than "regular dividends" and "dividend capture" for Levin's equity portfolio.

Answer Question 3-B on This Page

Identify from the following choices the incremental revenue approach that has both counterparty and collateral risks. (circle one)
i. Futures.   ii. Securities Lending.
Justify your response.

Answer Question 3-C on This Page

Select the *most appropriate* U.S. equity index benchmark from the following choices which satisfies the client's security selection guidelines: (circle one)
i. large- capitalization with a value tilt. ii. small- capitalization with a core tilt. iii. large- capitalization with a growth tilt.
Justify your response.

Answer Question 3-D on This Page

Based on Exhibit 1, **determine** which fund assuming full-replication indexing would *most likely* have the higher expected tracking error. (circle one)	
SPYG	IWV
Support your response with *two* reasons.	

QUESTION 5 HAS THREE PARTS (A, B, C) FOR A TOTAL OF 16 MINUTES.

Note: The scenario below has been extracted from Question 5 of the 2014 Level III CFA® examination (morning session). The information and question related to Part C has been updated to reflect the 2019 curriculum.

Kevin Jardine is Chief Financial Officer of GHPL, a pharmaceutical firm that develops insulin delivery devices for use in treating diabetes. GHPL operates a defined benefit (DB) pension plan that is open to new participants. The DB plan is entirely funded by contributions from GHPL.

The firm's risk committee asks Jardine to assess how GHPL's DB plan compares to the plans of two competitors, MWOL and QYDL. He summarizes selected financial data in Exhibit 1 and plan characteristics in Exhibit 2 for each of the three firms.

Exhibit 1
Selected Financial Data
(amounts in USD millions, except ratios)

	GHPL	MWOL	QYDL
For the Year Ended 31 December 2013			
Sales	500	300	800
Net Income	135	90	120
As of 31 December 2013			
Projected benefit obligation	520	409	201
Debt-to-equity ratio	1.3	1.1	1.4

Exhibit 2
DB Plan Characteristics

	GHPL	MWOL	QYDL
Provision allowing lump-sum distributions	Yes	No	No
Provision allowing early retirement	No	No	Yes
Proportion of active lives	62%	57%	69%
Plan funded status	Surplus	Deficit	Surplus

A. Determine, for *each* category below, which company's pension plan *most likely* has the lowest risk tolerance:

i. Sponsor financial status/profitability
ii. Workforce characteristics

Justify *each* response with *one* reason.

Note: Consider *each* category independently.

(6 minutes)

The growth rates of GHPL's revenue and number of employees are expected to exceed the sector's annual growth rate over the next several years. As a result, Jardine concludes that GHPL's proportion of active lives will increase over the next two years. He also reviews the details of GHPL's DB plan and notes that the provision allowing lump-sum distributions will expire in 18 months.

B. Determine, for *each* factor below, whether the DB plan's liquidity requirement in two years will be lower, the same, or higher relative to its liquidity requirement today, holding all else constant:

i. Change in proportion of active lives
ii. Change in provision allowing lump-sum distributions

Justify *each* response with *one* reason.

Note: Consider *each* factor independently.

(6 minutes)

One year later, GHPL's DB plan is in deficit. The proportion of active lives has increased over the previous year. The median age of GHPL's workforce is now 35 years and the retirement age eligible for full benefits is 60 years. The management wants to eliminate the plan's current funding shortfall without having to make additional contributions to the plan. As a result, the pension plan's investment policy statement is under review.
Jardine compares two IPSs for GHPL:

Exhibit 3

	IPS ver 1.1	IPS ver 1.2
Return requirement	Plan's objective is to outperform the benchmark return by 450 bps.	Plan's objective is to match the benchmark return of 8.0%.
Risk tolerance	Plan has a high risk tolerance because of the long-term nature of its liabilities.	Plan has a low risk tolerance because of its current plan status to assume higher risk.

Time horizon	Plan has a shorter time horizon because the number of retirees is unaffected by the increase in the proportion of active lives.	Plan has a longer time horizon because of plan demographics.
Liquidity requirement*	Plan has higher liquidity needs	Plan has lower liquidity needs

*GHPL will not contribute to its pension plan over the next several years.

C. Identify which investment policy statement, ver 1.1 or ver 1.2 is more appropriately framed regarding each of the following components of GHPL's pension plan:

i. Return requirement.
ii. Time horizon.

Justify *each* response with *one* reason.

(4 minutes)

Answer Question 5-A on This Page

Note: Consider *each* category independently.

Category **.**	**Determine, for *each* category, which company's pension plan *most likely* has the lowest risk tolerance.** **(circle *one*)**	**Justify *each* response with *one* reason**
i. Sponsor financial status/profitability	GHPL MWOL QYDL	
ii. Workforce characteristics	GHPL MWOL QYDL	

Answer Question 5-B on This Page

Note: Consider *each* factor independently.

Category	**Determine, for *each* category, which company's pension plan *most likely* has the lowest risk tolerance. (circle *one*)**	**Justify *each* response with *one* reason**
i. Change in proportion of active lives	Lower the same higher	
ii. Change in provision allowing lump-sum distributions	Lower the same higher	

Answer Question 5-C on This Page

Discuss the arguments for and against recommendation i and ii.

QUESTION 7 HAS THREE PARTS (A, B, C) FOR A TOTAL OF 11 MINUTES.

Kelly Liu is a fixed-income portfolio manager at an investments firm based in UK. Her portfolio consists of government bonds and investment-grade corporate bonds. Liu wants to improve the risk-return profile of her portfolio by investing in higher-yield bonds. She discusses the composition of her portfolio with Andy McDermand, a senior analyst at the firm. McDermand informs Liu about a 10-year bond issued by CYS Corporation trading at a price of 91.70. It has a modified duration of 8.54, and a spread duration of 8.54. For this bond, McDermand speculates on the price change if the interest rates decrease by 25 bps and its credit spread increases by 15 bps.

A. Calculate the CYS Corporation bond's price change (in percentage terms) based on McDermand's interest rate decrease and credit spread increase speculations. **Show** your calculations.

(4 minutes)

McDermand further makes the following statements on the differences between investment-grade and high-yield bonds.

<u>Statement 1</u>: When default rates are high and credit spreads are relatively wide, high-yield bonds tend to perform more like investment grade bonds.

<u>Statement 2</u>: Investment grade bonds have greater exposure to interest rate risk than high yield bonds.

<u>Statement 3</u>: High yield bonds have greater exposure to credit risk than investment grade bonds.

B. Determine which statement about the differences between investment-grade bonds and high-yield bonds is inaccurate. **Justify** your response.

(3 minutes)

Liu then explores the opportunities in structured financial instruments primarily in collateralized debt obligations (CDOs). She is evaluating a CDO with the following structure – a senior tranche and two subordinated tranches – a mezzanine tranche and an equity tranche. She believes that the correlation of expected defaults on the CDO collateral of the senior and subordinated tranches will increase.

C. Determine, based on this belief, if the mezzanine tranche is more desirable or less desirable relative to the senior and equity tranches. **Justify** your response.

(4 minutes)

Answer Question 7-A on This Page

Calculate the CYS Corporation bond's price change (in percentage terms) based on McDermand's interest rate decrease and credit spread increase speculations. **Show** your calculations.

Answer Question 7-B on This Page

Determine which statement about the differences between investment-grade bonds and high-yield bonds is inaccurate. (circle one)		
Statement 1	Statement 2	Statement 3
Justify your response.		

Answer Question 7-C on This Page

Determine, based on this belief, if the mezzanine tranche is more desirable or less desirable relative to the senior and equity tranches. (circle one)	
More desirable	Less desirable
Justify your response.	

Guideline Answers

Answer Question 3-A on This Page

Describe potential sources of additional income other than "regular dividends" and "dividend capture" for Levin's equity portfolio.

Besides "regular" and, in some cases, special dividends from the dividend-paying companies in Levin's portfolio, he could generate additional income from the following sources:

A potential source of income for Levin's portfolio would be securities (stock) lending, whereby eligible equities in his portfolio could be loaned to other market participants, including those seeking to short sell securities. Income generation would be from fees received from the stock borrower as well as from reinvesting the cash collateral received.

Another potential income - generating strategy available to Levin is selling (writing) options, including covered call. In writing a covered call, an options strategy, the portfolio manager already owns the underlying stock and sells a call option on that stock.

Another options strategy is writing a *cash- covered put* (also called a *cash- secured put*), whereby the Levin could write a put option on a stock and simultaneously deposit money equal to the exercise price into a designated account. Under both covered calls and cash- covered puts, income is generated through the writing of options.

Reference: Introduction to Equity Portfolio Management, Section 4, LOS. c.

Answer Question 3-B on This Page

Identify from the following choices the incremental revenue approach that has both counterparty and collateral risks. (circle one)	
i. Futures.	ii. Securities Lending.
Justify your response.	
Securities lending—a form of collateralized lending—may be used to generate income for portfolios stock lenders and can generate further income by reinvesting the cash collateral received. The proceeds from securities lending help offset portfolio management costs. In securities lending an investor is exposed to counterparty or credit risk of the stock borrower in addition to risks related to collateral posted by the borrower.	

Reference: Passive Equity Investing, Section 6.2, LOS. f.

Answer Question 3-C on This Page

Select the *most appropriate* U.S. equity index benchmark from the following choices which satisfies the client's security selection guidelines: (circle one)
i. large- capitalization with a value tilt. ii. small- capitalization with a core tilt. iii. large- capitalization with a growth tilt.
Justify your response.
To address the client's guidelines (sector diversification based on GICS, liquidity, risk, dividend yield, P/E, and P/B), the U.S. equity index benchmark should consist of large- capitalization stocks with a growth tilt. Therefore, choice iii is the most appropriate. A large capitalization index contains the largest- cap stocks, which tend to have the highest liquidity. Growth stocks tend to exhibit low dividend yields, high P/E, high price momentum and high EPS growth. Choice i is not appropriate because large - capitalization stocks with a value tilt will include value stocks exhibiting high dividend yields and low P/E and P/B ratios. Choice ii is not appropriate because, small-capitalization stocks tend to be riskier than large-capitalization stocks. The client has a preference for relatively lower- beta (risk) stocks.

Reference: Passive Equity Investing, Section 2.2, LOS. a.

Answer Question 3-D on This Page

Based on Exhibit 1, **determine** which fund assuming full-replication indexing would *most likely* have the higher expected tracking error. (circle one)
SPYG   IWV
Support your response with *two* reasons.
An index that has a large number of securities will likely lead to a higher tracking error than one with fewer securities. Based on the number of constituents in the two indexes (S&P 500 has 506, and Russell has 3,000), Russell is expected to have the higher tracking error.
Higher fees bring down excess returns. Therefore, higher expense ratios (SPYG: 0.04%; and IWV: 0.20%) will lead to lower excess returns and higher tracking error. IWV has the higher expense ratio of the two funds, thus it will have higher expected tracking error.

Reference: Passive Equity Investing, Section 4,5.2, LOS. d, e.

Answer Question 5-A on This Page

Note: Consider *each* category independently.

Category .	**Determine,** for *each* category, which company's pension plan *most likely* has the lowest risk tolerance. (circle *one*)	**Justify** *each* response with *one* reason.
i. Sponsor financial status/profitability	GHPL MWOL QYDL	Financial status/profitability can affect the sponsor's ability and willingness to make payments to the pension plan and thus directly impact the plan's risk tolerance. All else equal, the pension plan of a company with lower profitability and higher debt ratios has a lower risk tolerance. • QYDL has the lowest net income margin (15%) and has the highest debt to equity ratio (1.4) therefore its pension plan most likely has the lowest risk tolerance. The absolute level of the projected benefit obligation is not sufficient to support conclusions about the sponsor's financial status/profitability. The funded status of the plan is not in the "Sponsor financial status/profitability" category.
ii. Workforce characteristics	GHPL MWOL QYDL	All else equal, the greater the proportion of retired lives (lowest proportion of active lives), the shorter the duration of plan liabilities and the lower the risk tolerance. • MWOL's DB Plan has the greatest proportion of retired lives (lowest proportion of active lives 57%) and therefore most likely has the lowest risk tolerance. Provisions for lump-sum payments and early retirements are plan features and not workforce characteristics. The funded status of the plan is also not a workforce characteristic.

Reference: *Managing Institutional Investor Portfolios, Section 2.1.1. LOS. c.*

Answer Question 5-B on This Page

Note: Consider *each* factor independently.

Category	**Determine, for *each* category, which company's pension plan *most likely* has the lowest risk tolerance. (circle *one*)**	**Justify *each* response with *one* reason**
i. Change in proportion of active lives	Lower the same higher	The net cash outflow (benefit payments minus pension contributions) constitutes a pension plan's liquidity requirement. Although distributions from the plan will remain unchanged (as the number of retirees is unaffected by the increase in the proportion of active lives), the higher proportion of active lives lowers the plan's liquidity requirement because contributions to the plan by GHPL would be higher.
ii. Change in provision allowing lump-sum distributions	Lower the same higher	Abolishing lump-sum distributions will lower the plan's liquidity requirement in two years. Large withdrawals related to the exercise of this provision will no longer be possible.

Reference: *Managing Institutional Investor Portfolios, Section 2.1.3. LOS. b.*

Answer Question 5-C on This Page

Component	**Identify** which investment policy statement, ver 1.1 or ver 1.2 is more appropriately framed regarding each of the following components of GHPL's pension plan. **(circle *one*)**	**Justify *each* response with *one* reason**
i. Return requirement	ver 1.1 ver 1.2	IPS ver 1.2 has the appropriate return requirement for GHPL's pension plan. Because the plan is currently in deficit, management's primary objective should be to make it financially stronger. The risk inherent in attempting to maximize total returns would be inappropriate.
ii. Time horizon	ver 1.1 ver 1.2	IPS ver 1.2 has the appropriate time horizon for GHPL's plan. GHPL's going- concern pension plan has a long time horizon, because of the company's relatively low median age of its workforce compared to its retirement age. Its proportion of active lives has also increased over the previous year.

Reference: *Managing Institutional Investor Portfolios, Section 2.1, LOS. b, c, d.*

Answer Question 7-A on This Page

Calculate the CYS Corporation bond's price change (in percentage terms) based on McDermand's interest rate decrease and credit spread increase speculations. **Show** your calculations.

A decrease in interest rates results in an increase in the bond price. An increase in the credit spread results in a decrease in the bond price. For the CYS bond, using its modified duration of 8.54, the effect of the 25 bps decrease in interest rates leads to an approximate percentage price change of $-8.54 \times -0.0025 = 2.135\%$. The spread duration shows the effect of the 15 bps increase in the credit spread. The approximate percentage price change resulting from the increase in the credit spread is $-8.54 \times 0.0015 = -1.281\%$. The combined effect is a total change of $2.135\% - 1.281\% = 0.854\%$, or a price increase of 0.854%. Therefore, the price will be increased to $91.70 \times (1 + 0.00854) = 92.4831$.

Reference: *Fixed-Income Active Management: Credit Strategies, Section 2.2. LO.a.*

Answer Question 7-B on This Page

Determine which statement about the differences between investment-grade bonds and high-yield bonds is inaccurate. (circle one)		
Statement 1	Statement 2	Statement 3

Justify your response.

Investment-grade corporate bonds have meaningful interest rate sensitivity, and therefore, investment-grade portfolio managers usually manage their portfolio durations and yield curve exposures closely.

In contrast, high-yield portfolio managers are more likely to focus on credit risk and less likely to focus on interest rate and yield curve dynamics.

However, when default losses are low and credit spreads are relatively tight, high-yield bonds tend to behave more like investment-grade bonds—that is, with greater interest rate sensitivity.

Reference: *Fixed-Income Active Management: Credit Strategies, Section 2. LO.a.*

Answer Question 7-C on This Page

Determine, based on this belief, if the mezzanine tranche is more desirable or less desirable relative to the senior and equity tranches. (circle one)	
More desirable	Less desirable
Justify your response.	
The correlation of expected defaults on a CDO's collateral affects the relative value between the senior and subordinated tranches of the CDO. As correlations increase, the values of the mezzanine tranches usually increase relative to the values of the senior and equity tranches.	

Reference: *Fixed-Income Active Management: Credit Strategies, Section 7. LO.h.*