The Morning Session of the 2009 Level III CFA® Examination has 11 questions. For grading purposes, the maximum point value for each question is equal to the number of minutes allocated to that question.

Question	Topic	Minutes
1	Portfolio Management – Individual	26
2	Portfolio Management – Individual	9
3	Portfolio Management – Institutional	24
4	Portfolio Management – Institutional	11
5	Portfolio Management – Economics	19
6	Portfolio Management – Asset Allocation	10
7	Portfolio Management – Equity Investments	17
8	Portfolio Management – Alternative Investments	15
9	Portfolio Management – Risk Management	16
10	Portfolio Management – Monitoring and Rebalancing	15
11	Portfolio Management – Performance Evaluation	18
	Total:	**180**

> **Questions 1 and 2 relate to Patricia and Alexander Tracy. A total of 35 minutes is allocated to these questions.** *Candidates should answer these questions in the order presented.*

QUESTION 1 HAS FOUR PARTS (A, B, C, D) FOR A TOTAL OF 26 MINUTES.

Patricia and Alexander Tracy, both age 59, are residents of Canada. They have twin sons who will enter a four-year university program in one year. Patricia is a long-time employee of a telecommunications company. Alexander is a self-employed sales consultant.

Alexander's annual income is now steady after years of extreme highs and lows. The Tracys have built an investment portfolio through saving in Alexander's high income years. The Tracys' current annual income is equal to their total expenses; as a result, they cannot add to savings currently. They expect that both their expenses and income will grow at the inflation rate. All medical costs, now and in the future, are fully covered through government programs.

The Tracys worry about whether they have saved enough for retirement, and whether they will be able to maintain the real value of their portfolio. Inflation is expected to average 4% for the foreseeable future.

The Tracys have approached Darren Briscoe to help them analyze their investment strategy and retirement choices. The Tracys disagree about the appropriate investment strategy. Patricia prefers not losing money over making a high return. This is partly a result of continuing regret for a loss experienced in an equity mutual fund several years ago. Alexander's history of making frequent changes in their portfolio greatly annoyed Patricia. She thinks Alexander focused only on potential return and paid little attention to risk.

The Tracys currently have all their assets in inflation-indexed, short-term bonds that are expected to continue to earn a return that would match the inflation rate after taxes. After retirement, they are willing to consider changing their investment strategy if necessary to maintain their lifestyle.

The Tracys are eligible to retire next year at age 60. If they do, Patricia will receive annual payments from her company's defined-benefit pension plan and both Patricia and Alexander will receive payments from the Canadian government pension plan. Alexander does not participate in any company or individual retirement plan. Briscoe has compiled financial data and market expectations for the Tracys' retirement, shown in Exhibit 1. Currently, Briscoe estimates that the Tracys' investment portfolio will grow to 1,100,000 Canadian dollars (CAD) by their retirement date next year.

Exhibit 1
Financial Data and Market Expectations
Patricia and Alexander Tracy

	Retirement at Age 60 (2010)
Expected annual expenses	CAD 125,000
Annual pension income (after-tax)	
Patricia's company plan	CAD 40,000
Combined government pension	CAD 40,000
Total annual pension income	CAD 80,000
Expected annual inflation	4.0%
Expected annual after-tax portfolio return	4.0%

Pension income from both Patricia's company plan and the government pension plan is fully indexed for inflation. Briscoe expects a tax rate of 20% to apply to the Tracys' withdrawals from the investment account. The Tracys expect to earn no employment income after retirement. The Tracys' residence is not considered part of their investable assets.

The Tracys have the option to delay retirement until age 65. The Tracys intend to retire together, whether it is in 2010 at age 60 or in 2015 at age 65.

Briscoe determines that if the Tracys retire at age 60, their risk tolerance is below average. If they retire at age 60, they plan to pay off their mortgage and associated taxes by withdrawing CAD 100,000 from their portfolio upon retirement.

Another consideration for the Tracys relates to funding university expenses for their sons. If the Tracys retire at age 60, each son will receive a scholarship available to retiree families from Patricia's company that will cover all university costs.

If the Tracys retire at age 65, all pension income would increase and would almost meet their annual spending needs. If they retire at age 65, the Tracys would pay all university expenses from their investment portfolio through an arrangement with the university. The arrangement, covering both sons, would require the Tracys to make a single payment of CAD 200,000 at age 60.

A.   i.   **Prepare** the return objectives portion of the Tracys' investment policy statement (IPS) that will apply if they retire at age 60.

       ii.   **Calculate** the pre-tax nominal rate of return that is required for the Tracys' first year of retirement if they retire at age 60. **Show** your calculations.

(12 minutes)

B.   **Indicate** specific factors for the Tracys, for *each* of the following, which support
         Briscoe's conclusion that the Tracys' risk tolerance is below average:

         i.   Ability to take risk. **Indicate** *two* factors.
         ii.   Willingness to take risk. **Indicate** *one* factor.

(6 minutes)

C.   **Prepare** the current (2009) liquidity constraint for the Tracys' IPS:

         i.   if they retire at age 60.
         ii.   if they retire at age 65.

(4 minutes)

D.   **Prepare** the current (2009) time horizon constraint for the Tracys' IPS:

         i.   if they retire at age 60.
         ii.   if they retire at age 65.

(4 minutes)

> **Questions 1 and 2 relate to Patricia and Alexander Tracy. A total of 35 minutes is allocated to these questions.** *Candidates should answer these questions in the order presented.*

QUESTION 2 HAS ONE PART FOR A TOTAL OF 9 MINUTES.

Patricia and Alexander Tracy both retired five years ago at age 65 and their sons now support themselves. As a result of better than expected investment returns over the past five years, the Tracys' investment portfolio has significantly increased in value. They now think that their future after-tax investment returns will exceed their expenses for their remaining joint life expectancy. Their new investment objective is to maximize the assets their sons will inherit, subject to a review of the Tracys' risk tolerance by their financial advisor.

During retirement, the Tracys' medical costs are fully covered by the government. The Tracys have no earned income during retirement. They have previously paid off all debt and expect to remain debt-free.

Determine whether *each* of the following measures has increased, decreased, or remained unchanged for the Tracys since just prior to retirement:

i.   implied assets
ii.   implied liabilities
iii. risk tolerance

Justify *each* response with *one* reason.

Answer Question 2 in the Template provided on page 11.

(9 minutes)

Answer Question 2 on This Page

Template for Question 2

Measure	Determine whether *each* of the following measures has increased, decreased, or remained unchanged for the Tracys since just prior to retirement. (circle one)	Justify *each* response with *one* reason.
i. implied assets	Increased Decreased Remained unchanged	
ii. implied liabilities	Increased Decreased Remained unchanged	
iii. risk tolerance	Increased Decreased Remained unchanged	

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QUESTION 3 HAS FIVE PARTS (A, B, C, D, E) FOR A TOTAL OF 24 MINUTES.

Wirth-Moore Corporation is a U.S.-based publisher of educational media. Wirth-Moore sponsors a defined-benefit pension plan. The plan's assets are invested in a broadly diversified portfolio of government and investment grade corporate bonds. Pension plan participants include both active workers and retirees. Pension benefits payments are not adjusted for inflation. The duration and market value of the pension plan's assets are equal to the duration and market value of the plan's projected benefits obligation (PBO). Wirth-Moore believes that it has adequate financial strength and profitability to maintain annual pension contributions based on the pension plan's features and Wirth-Moore's workforce characteristics.

Wirth-Moore recently established the Foundation for the Future (FF), a company-sponsored charitable foundation. FF's mandate from Wirth-Moore is to promote sustainable living through education and research on renewable resources.

FF employs one person to administer grant applications, but does not employ full-time investment professionals. Wirth-Moore donated 10 million U.S. dollars (USD) to FF as a permanent endowment. FF is not restricted to spending only investment income. Wirth-Moore does not plan to make additional donations to FF in the foreseeable future, although FF is permitted to accept donations from others.

FF's board retains Allyson Joy, an investment advisor, to make recommendations for its endowment fund. She summarizes her understanding of FF's investment objectives and related information in Exhibit 1.

Exhibit 1
FF Investment Information

- To minimize taxes under U.S. law, FF's board intends to make annual distributions equal to 5% of its average asset market value.
- The board adopted a goal to increase the value of the endowment by seeking a rate of return exceeding the rate needed to maintain the real purchasing power of the portfolio.
- FF's investment policy limits the amount that can be invested in any single issuer's securities to no more than 5% of the portfolio.
- FF's annual investment management expenses are 0.45% of assets.
- The annual rate of inflation is expected to be 3% in both FF's overhead and in the fields of education and research that FF supports.

A. **Prepare** FF's return objective for next year. **Show** your calculations.

(4 minutes)

B. i.   **Determine** whether FF or the Wirth-Moore pension plan has greater ability to
           take risk. **Justify** your determination with *one* reason.

    ii.   **Determine** whether FF or the Wirth-Moore pension plan has greater willingness
           to take risk. **Justify** your determination with *one* reason.

(6 minutes)

C. **Formulate** the following investment policy constraints for FF:

    i.   Liquidity.
          Show your calculations.

    ii.   Time horizon.
          Justify your response with *one* reason.

(6 minutes)

FF presently bases its annual spending on the average market value of its assets each year.
Noland Reichert, a member of FF's board, is concerned about recent market volatility. Reichert
proposes a spending rule based on a rolling three-year average market value. In response to
Reichert's proposal, Joy recommends a geometric spending rule, where spending is based on a
geometrically declining average of trailing endowment values. FF's external tax counsel advises
that there would be no adverse tax consequence from adopting either smoothing rule.

D. **Explain** the effect on FF's spending of adopting Joy's smoothing rule rather than
    Reichert's smoothing rule.

(4 minutes)

Reichert also serves on the board of Headwaters University Foundation, an endowment with
more than USD 1 billion in assets. Headwaters recently invested in a private equity venture
based on the recommendation of its internal investment staff. The venture requires a USD 2.5
million minimum investment by each participant, with a five-year lock-up provision. The
private equity venture is not expected to generate income, but has the potential to increase in
value at a rate of 20% per year over the next five years. Reichert recommends that FF should
participate in this private equity venture.

E. **Justify**, with *two* reasons, why Reichert's recommendation is inappropriate for FF.

(4 minutes)

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QUESTION 4 HAS THREE PARTS (A, B, C) FOR A TOTAL OF 11 MINUTES.

Setzer is a U.S.-based chain of department stores with operating assets of 1 billion U.S. dollars (USD) in market value terms. Setzer sponsors a defined-benefit pension plan (Pension Plan) that invests exclusively in domestic equities and domestic investment grade corporate bonds. Selected Setzer and Pension Plan financial data are shown in Exhibit 1.

Exhibit 1
Setzer and Pension Plan Financial Data

Setzer (excluding Pension Plan)	
Measure	**Value**
Debt/equity ratio (market value)	1.0
Operating assets market value (USD billion)	1.0
Equity beta	2.0
Debt beta	0.0

Pension Plan	
Measure	**Value**
Equity portfolio beta	1.0
Debt investments beta	0.0
Market value (USD million)	800
Equity allocation (%)	60
Surplus (USD million)	0.0

Setzer hires Tim Bearne to study the implications of the asset allocation of the Pension Plan's investment portfolio on Setzer's financial and operating characteristics. Bearne notes that a defined-benefit pension plan's assets and liabilities can directly affect the sponsoring company's equity price, the equity price volatility, and the amount of operational risk the company is able to assume.

The risk-free rate of return is 3% and the equity risk premium is 9%. Bearne's preliminary analysis does not take the effects of taxes into consideration.

Setzer bases its capital budgeting decisions on the internal rate of return (IRR) and accepts capital projects with IRR greater than Setzer's weighted average cost of capital (WACC). Setzer does not include the Pension Plan's assets and liabilities when calculating its WACC.

A.   **Calculate** Setzer's WACC including the Pension Plan's assets and liabilities.

(4 minutes)

B.   **Discuss** the implications of **not** including the Pension Plan's assets and liabilities in Setzer's capital budgeting decision-making process.

Note: No calculations are required.

(4 minutes)

Six months have passed. As a result of negative returns on the Pension Plan's investment portfolio, the Pension Plan is now underfunded by USD 50 million. The Pension Plan's investment committee, seeking to raise expected returns, increases the investment portfolio's equity allocation to 70%. Immediately after this decision is implemented, Setzer's equity price volatility and beta increase. Assume Setzer's operational assets and its debt/equity ratio (market value) remained constant during the six-month period.

C.   **Discuss** why Setzer's equity beta increases in response to the Pension Plan's change in the asset allocation.

(3 minutes)

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QUESTION 5 HAS THREE PARTS (A, B, C) FOR A TOTAL OF 19 MINUTES.

Robert Spencer is a market forecaster with Windsor Investment Management, a U.K.-based wealth management firm. Spencer is asked to review the current economic conditions and market outlook for the U.K. and to set long-term market return expectations for domestic equities. These expectations will form the basis of Windsor's future client asset allocations. Spencer gathers the U.K. capital market data displayed in Exhibit 1.

Exhibit 1
U.K. Capital Market Data

Historical Data (past 100 years)	
Equity compounded annual growth rate (%)	11.2
Equity risk premium (%)	5.3
Dividend yield (%)	4.0
Equity repurchase yield (%)	–0.5
Nominal earnings growth return (%)	4.6
Current and Forward Looking Data	
Current equity price-to-earnings ratio	14.6
Expected equities real earnings growth rate (%)	2.7
Expected long-term inflation rate (%)	2.5

A. **Determine**, using the information in Exhibit 1 and the Grinold-Kroner model, the component sources of the historical nominal return for U.K. equities:

  i. income return
  ii. earnings growth
  iii. repricing return

(6 minutes)

A year has passed. The Bank of England (the U.K.'s central bank) has been raising the short-term interest rate. Business confidence is starting to decline. Spencer is asked to analyze the U.K. economy and consider how the Bank of England might respond in the short term to economic conditions. He gathers the economic data shown in Exhibit 2.

Exhibit 2
U.K. Economic Data (%)

Neutral value of the short-term interest rate	3.5
Forecast U.K. GDP growth rate	0.3
Trend U.K. GDP growth rate	2.2
Yield to maturity on 10-year gilt (government bond)	4.2
Yield to maturity on 1-year gilt (government bond)	5.5
Bank of England short-term interest rate	5.5
Target U.K. inflation rate	2.0
Forecast U.K. inflation rate	4.4

B.   i.   **Determine** the target short-term interest rate for the Bank of England using the Taylor rule and the data in Exhibit 2. **Show** your calculations.

      ii.   **Describe** the *most likely* potential negative economic result if the Bank of England bases its interest rate policy on the Taylor rule.

(5 minutes)

Nine more months have passed and the U.K. economy has fallen into a recession. Under pressure to aid the economy, the U.K. Chancellor of the Exchequer (finance minister) announces a four-part economic plan aimed at improving the long-term growth trend of the U.K. economy (GDP). The plan includes the following initiatives:

- Introduction of incentives encouraging companies to increase their use of information technology;
- An increase in the mandatory retirement age from 65 to 70 years of age;
- A broad increase in taxes to fund programs that provide support for low-income families;
- A one-time tax rebate to stimulate consumer spending.

C.   **Determine**, for *each* part of the economic plan, whether the initiative is *most likely* to increase, decrease, or leave unchanged the long-term growth trend of the U.K. economy (GDP). **Justify** *each* response with *one* reason.

Note: No calculations are required.

Answer Question 5-C in the Template provided on page 36.

(8 minutes)

Answer Question $\boxed{5}$ on This Page

Template for Question 5-C
Note: No calculations are required.

Initiative	Determine, for *each* part of the economic plan, whether the initiative is *most likely* to increase, decrease, or leave unchanged the long-term growth trend of the U.K. economy (GDP). (circle one)	Justify *each* response with *one* reason.
Introduction of incentives encouraging companies to increase their use of information technology;	Increase Decrease Leave unchanged	
An increase in the mandatory retirement age from 65 to 70 years of age;	Increase Decrease Leave unchanged	
A broad increase in taxes to fund programs that provide support for low-income families;	Increase Decrease Leave unchanged	
A one-time tax rebate to stimulate consumer spending.	Increase Decrease Leave unchanged	

QUESTION 6 HAS ONE PART FOR A TOTAL OF 10 MINUTES.

Kallis Employees Pension Plan (KEPP) is the pension fund of a Finland-based mining company. KEPP is fully funded with 8 billion euros (EUR) in assets and has the following investment policy objectives:

- Earn a 10.3% annual portfolio return.
- Have a maximum Roy's safety-first ratio with a minimum return threshold of 8%.
- Maintain a cash balance sufficient to meet liquidity requirements.
- Maintain a maximum of 10% of assets in a passively managed sub-portfolio that is indexed to the S&P GSCI Precious Metals Index (SPMI).

KEPP expects to pay EUR 320 million in pension benefits this year.

At an investment committee meeting regarding possible changes to KEPP's strategic asset allocation policy, the committee reviews five alternative portfolio allocations that meet KEPP's return objectives. These alternatives are shown in Exhibit 1.

Exhibit 1
KEPP
Alternative Portfolio Allocations (%)

Asset Class	Portfolio Allocations				
	V	**W**	**X**	**Y**	**Z**
Cash equivalents	3	5	6	5	6
SPMI	10	12	8	7	9
Global bonds	40	40	47	45	41
Global equities	47	43	39	43	44
Total	100	100	100	100	100
Portfolio Measures	**V**	**W**	**X**	**Y**	**Z**
Expected total annual return	11.26	11.19	10.44	10.60	10.87
Expected standard deviation	14.90	14.82	13.93	14.15	14.52

Determine the *most* appropriate portfolio for KEPP. **State**, for *each* portfolio **not** selected, *one* reason why it is **not** the most appropriate.

Answer Question 6 in the Template provided on page 39.

(10 minutes)

Answer Question 6 on This Page

Template for Question 6

Determine the *most* appropriate portfolio for KEPP. (circle one)	State, for *each* portfolio not selected, *one* reason why it is not the most appropriate.
V	
W	
X	
Y	
Z	

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QUESTION 7 HAS THREE PARTS (A, B, C) FOR A TOTAL OF 17 MINUTES.

Chandra Pabst, CFA, is an equity portfolio manager at an advisory firm that provides asset management services to nonprofit organizations. The firm was recently hired by the U.S.-based Aberdeen Family Foundation. Aberdeen's board of directors was dissatisfied with its previous equity manager. Pabst is assigned to develop a strategy for the equity portion of the portfolio.

In her initial meeting with the Aberdeen investment committee, Pabst compiled the following notes:

- The committee agrees that security prices reflect publicly available information.

- The committee expects a decline in interest rates.

- The board fired the previous equity manager because the portfolio had tracking risk exceeding 1%.

- Aberdeen pays taxes on interest, dividends, and realized capital gains.

- The board is willing to accept a low information ratio as long as returns are sufficient to maintain targeted spending.

At the end of the meeting, Pabst recommends that the Aberdeen portfolio be managed using a passive approach. The committee agrees with Pabst's recommendation.

A. **Justify**, with *three* reasons based only on Pabst's notes, why the use of a passive investment approach is the *most* appropriate for Aberdeen's equity portfolio.

Answer Question 7-A in the Template provided on page 45.

(6 minutes)

Pabst next begins to transition Aberdeen's portfolio holdings. She is constructing the portfolio using individual equities and is considering the following methods: full replication, stratified sampling, and optimization. The benchmark for the portfolio is the Russell 3000 Index, which is based on market capitalization and consists of 3,000 large U.S. publicly-traded companies. The value of Aberdeen's equity portfolio is 3,000,000 U.S. dollars (USD). The board prefers not to use complicated mathematical models that would be challenging to explain to donors.

B. **Determine**, from the three methods Pabst is considering, the *most* appropriate method for constructing the equity portfolio. **Justify** your response with *two* reasons related to Aberdeen's specific circumstances.

Answer Question 7-B in the Template provided on page 46.

(5 minutes)

Pabst was just hired to manage the endowment fund for the Forest Trust. The Forest Trust is actively managed and its holdings are shown in Exhibit 1.

Exhibit 1
Forest Trust Portfolio and Benchmark Data

	Portfolio	**Portfolio Benchmark**
Average market capitalization of stocks	USD 34 billion	USD 72 billion
Number of stocks	150	3,000
Price-to-book ratio	0.9	2.2
Long-term earnings growth rate (median analyst forecast)	5%	13%
Average earnings per share (EPS)	USD 0.02	USD 1.74
Dividend yield	1.3%	1.7%

Pabst is asked to classify the portfolio in one of the four value and growth substyles:

- contrarian
- high yield
- consistent growth
- earnings momentum

C.   **Identify** the substyle that *best* represents the portfolio. **Justify** your response with *two* reasons related to the characteristics of the portfolio relative to the benchmark.

      Answer Question 7-C in the Template provided on page 47.

                                        (6 minutes)

Answer Question 7 on This Page

Template for Question 7-A

Justify, with *three* reasons based only on Pabst's notes, why the use of a passive investment approach is the *most* appropriate for Aberdeen's equity portfolio.
1.
2.
3.

Answer Question ⏛7⏛ on This Page

Template for Question 7-B

Determine, from the three methods Pabst is considering, the *most* appropriate method for constructing the equity portfolio. (circle one)	Justify your response with *two* reasons related to Aberdeen's specific circumstances.
full replication stratified sampling optimization	1. 2.

Answer Question 7 on This Page

Template for Question 7-C

Identify the substyle that *best* represents the portfolio. (circle one)	Justify your response with *two* reasons related to the characteristics of the portfolio relative to the benchmark.
contrarian high yield	1.
consistent growth earnings momentum	2.

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QUESTION 8 HAS TWO PARTS (A, B) FOR A TOTAL OF 15 MINUTES.

Hank Smith is the portfolio manager of U.S.-based PM Hedge Fund (PM), which focuses on precious metals, fixed income, and derivatives. Smith has a strategy of rolling forward a long position in short-dated platinum futures traded on NYMEX. Smith's expectations are as follows:

- Electricity supply disruptions in South Africa, the world's dominant platinum producer, will cause platinum supply to fall and spot prices to rise.
- Interest rates will rise.
- The convenience yield on platinum will increase.

Smith observes that his expectations are not yet reflected in platinum futures prices.

A. **Determine**, given that Smith's market expectations are correct, whether an increase, a decrease, or no change in *each* of the following return components should be expected:

i. spot return (price return)
ii. collateral return (collateral yield)
iii. roll return (roll yield)

Justify *each* response with *one* reason.

Answer Question 8-A in the Template provided on page 55.

(9 minutes)

PM holds a four-year 120,000,000 U.S. dollars (USD), 6% fixed rate bond that pays interest semi-annually. Smith expects four-year USD interest rates to rise. He wants to reduce the duration of the bond position. Lizelle Hoorn, an analyst at PM, suggests that Smith can reduce the modified duration of this position, which is currently 3, to a more acceptable 0.3 by using an interest rate swap. Smith wants the notional principal on the swap to be as close as possible to the USD 120,000,000 principal of the original bond. Hoorn provides Smith with four possible swaps, shown in Exhibit 1. Assume that the modified duration of the fixed rate component of a swap is 75% of its maturity.

Exhibit 1
Available Swap Positions

Swap	Swap Type	Swap Term	Payment Frequency
1	Pay fixed, receive floating	2 years	Semi-annually
2	Pay floating, receive fixed	4 years	Quarterly
3	Pay fixed, receive floating	4 years	Quarterly
4	Pay floating, receive fixed	2 years	Semi-annually

B. **Determine** which swap *best* achieves Smith's stated goals. **Justify** your response with *two* reasons.

Answer Question 8-B in the Template provided on page 56.

(6 minutes)

Answer Question 8 on This Page

Template for Question 8-A

Return component	Determine, given that Smith's market expectations are correct, whether an increase, a decrease, or no change in *each* of the following return components should be expected. (circle one)	Justify *each* response with *one* reason.
i. spot return (price return)	Increase Decrease No change	
ii. collateral return (collateral yield)	Increase Decrease No change	
iii. roll return (roll yield)	Increase Decrease No change	

Answer Question 8 on This Page

Template for Question 8-B

Determine which swap *best* achieves Smith's stated goals. (circle one)	Justify your response with *two* reasons.
Swap 1 Swap 2	1.
Swap 3 Swap 4	2.

QUESTION 9 HAS TWO PARTS (A, B) FOR A TOTAL OF 16 MINUTES.

Maple Leaf International is a Canadian corporation with business in Europe and Japan. Maple Leaf's business transactions generate exchange rate risk between the Canadian dollar (CAD) and both the euro (EUR) and Japanese yen (JPY). In order to hedge their exchange rate risk, management endorses the use of currency forwards, options, and swaps. Ian McKinley, chief risk officer, has been asked to present an analysis of the company's currency exposures to Maple Leaf's board of directors and senior managers.

Maple Leaf is long a forward contract on EUR 50 million at 1.63 CAD/EUR, expiring in six months. It is also long 100 JPY put options (European style) with expiration in six months, a strike price of 100 JPY/CAD, and a contract size of JPY 12.5 million. The current spot exchange rates are 1.64 CAD/EUR and 102.5 JPY/CAD. All of Maple Leaf's currency derivatives are traded over the counter (OTC) with North Bank. Key interest rates are displayed in Exhibit 1.

Exhibit 1
Six-month Risk-free Interest Rates
(Annualized)

CAD	3.0%
EUR	4.5%
JPY	0.5%

McKinley makes the following statements regarding the credit risk on currency swaps.

Statement 1: "The credit risk on currency swaps is greatest at the middle of the swap term."

Statement 2: "The credit risk on currency swaps is bilateral and isolated to the Maple Leaf-North Bank contracts."

A.   i.   **Determine** *one* reason related to credit risk that makes *each* of McKinley's statements incorrect.

Note: Simply reversing the statements will receive no credit.

ii.   **Discuss** *one* method to reduce credit risk associated with Maple Leaf's OTC currency derivative positions.

(6 minutes)

B.   i.   **Calculate** the amount at risk from a credit loss on the long EUR forward contract. **Determine** which party bears the credit risk. **Show** your calculations.

ii.   **Calculate** the amount at risk from a credit loss on the long JPY put option contract. **Determine** which party bears the credit risk. **Show** your calculations.

(10 minutes)

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QUESTION 10 HAS TWO PARTS (A, B) FOR A TOTAL OF 15 MINUTES.

Jackson Miller, a portfolio manager at Big Trust Bank, arranges a meeting with a client, Jin Huang, to review the performance of her portfolio and discuss Big Trust's market outlook.

At the meeting, Miller suggests examining Huang's portfolio rebalancing strategy to ensure that her portfolio stays consistent with her long-term objectives. The target strategic asset allocation for her portfolio and the corridor widths for Huang's percentage-of-portfolio rebalancing strategy are shown in Exhibit 1.

Exhibit 1
Huang's Strategic Asset Allocation and Corridor Widths

Asset Class	Target Weight	Corridor Widths
Domestic equity	25%	+/- 2.5%
Non-domestic equity	30%	+/- 3.0%
Domestic bonds	30%	+/- 3.0%
Risk-free securities	10%	+/- 1.0%
Alternative investments	5%	+/- 0.5%

Miller informs Huang that Big Trust recently revised its market outlook. Revised expectations are as follows:

- An increase in the price of gold, which is a component of the alternative investments asset class;
- Lower volatility of domestic bond prices as the economy becomes less sensitive to changes in oil prices;
- Lower transactions costs for non-domestic equities resulting from expanded electronic trading.

Huang asks how these revisions will affect the corridor widths associated with the percentage-of-portfolio approach to rebalancing.

A.   **Determine**, for *each* revised expectation, whether the stated asset class corridor width in Exhibit 1 should be wider, narrower, or unchanged. **Justify** *each* of your responses with *one* reason.

       Note: No calculations are required.

       Answer Question 10-A in the Template provided on page 67.

                                                        (9 minutes)

Miller meets with another client, Harriet Kilpatrick. Kilpatrick recently married and plans to have children in the near future. Her current portfolio, which has a value of 2 million U.S. dollars (USD), is invested in equities and risk-free securities. She asks Miller to develop a rebalancing strategy that will prevent her portfolio from dropping below USD 1.25 million.

Miller states that Big Trust's investment outlook predicts that equity prices will be trending upward. Kilpatrick says that she also wants to minimize her allocation to risk-free securities during a rising market in equities.

Miller tells Kilpatrick that his clients use one of three types of rebalancing strategies: a buy-and-hold strategy, a constant mix strategy, or a constant-proportion portfolio insurance (CPPI) strategy.

B. **Select** the *most* appropriate rebalancing strategy for Kilpatrick's portfolio. **Justify** your selection with *two* reasons.

Answer Question 10-B in the Template provided on page 68.

(6 minutes)

Answer Question 10 on This Page

Template for Question 10-A
Note: No calculations are required.

Asset class and revised expectation	Determine, for *each* revised expectation, whether the stated asset class corridor width in Exhibit 1 should be wider, narrower, or unchanged. (circle one)	Justify *each* of your responses with *one* reason.
Alternative investments: An increase in the price of gold, which is a component of the alternative investments asset class;	Wider Narrower Unchanged	
Domestic bonds: Lower volatility of domestic bond prices as the economy becomes less sensitive to changes in oil prices;	Wider Narrower Unchanged	
Non-domestic equity: Lower transactions costs for non-domestic equities resulting from expanded electronic trading.	Wider Narrower Unchanged	

Answer Question 10 on This Page

Template for Question 10-B

Select the *most* appropriate rebalancing strategy for Kilpatrick's portfolio. (circle one)	Justify your selection with *two* reasons.
buy-and-hold	1.
constant mix	2.
CPPI	

QUESTION 11 HAS TWO PARTS (A, B) FOR A TOTAL OF 18 MINUTES.

A fund sponsor has adopted a formal policy to guide its manager evaluations. Cecilia Velasco and Alberto Roca, two staff members, are discussing the performance of hedge fund managers and traditional fund managers.

Velasco and Roca begin by discussing how to evaluate hedge fund managers. Velasco suggests that hedge fund performance should be evaluated by comparing the manager's performance with the median of a universe of hedge funds with similar mandates.

A.   **Justify**, with *three* reasons, why Velasco's suggestion for evaluating hedge fund manager performance is inappropriate.

(6 minutes)

Velasco and Roca also appraise the performance of two traditional European equity managers. As part of the monitoring process, they have collected the information shown in Exhibit 1. Assume that it is appropriate to compare the performance of the two managers.

Exhibit 1
Five-year Performance Data ending 30 April 2009
(Annualized)

Performance Measure	Manager #1	Manager #2
Rate of return (%)	21.13	21.13
Sharpe ratio	1.17	1.21
M^2 (%)	18.72	19.27
Active risk (%)	2.17	4.18
Information ratio	0.52	0.27
Treynor measure (%)	19.15	17.17
Risk-free rate (%)	2.75	2.75

B.   **Determine**, for *each* case below, the *most* appropriate performance measure from Exhibit 1 to compare Manager #1 and Manager #2. **Identify**, in *each* case, which manager outperformed. **Explain** what caused the difference in performance between the two managers.

    i.   Reward per unit of systematic risk incurred
    ii.   Reward per unit of total risk incurred
    iii.   Reward per unit of risk earned by deviating from the benchmark's holdings

Answer Question 11-B in the Template provided on page 74.

(12 minutes)

Answer Question 11 on This Page

Template for Question 11-B

Case	Determine, for *each* case, the *most* appropriate performance measure from Exhibit 1 to compare Manager #1 and Manager #2.	Identify, in *each* case, which manager outperformed. (circle one)	Explain what caused the difference in performance between the two managers.
i. Reward per unit of systematic risk incurred		Manager #1 Manager #2	
ii. Reward per unit of total risk incurred		Manager #1 Manager #2	
iii. Reward per unit of risk earned by deviating from the benchmark's holdings		Manager #1 Manager #2	