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## Topic Break Down

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**QUESTION NO: 1**

Gabrielle Reneau, CFA, and Jack Belanger specialize in options strategies at the brokerage firm of Damon and Damon. They employ fairly sophisticated strategies to construct positions with limited risk, to profit from future volatility estimates, and to exploit arbitrage opportunities. Damon and Damon also provide advice to outside portfolio managers on the appropriate use of options strategies. Damon and Damon prefer to use, and recommend, options written on widely traded indices such as the S&P 500 due to their higher liquidity. However, they also use options written on individual stocks when the investor has a position in the underlying stock or when mispricing and/or trading depth exists.

In order to trade in the one-year maturity puts and calls for the S&P 500 stock index, Reneau and Belanger contact the chief economists at Damon and Damon, Mark Blair and Fran Robinson. Blair recently joined Damon and Damon after a successful stint at a London investment bank. Robinson has been with Damon and Damon for the past ten years and has a considerable record of success in forecasting macroeconomic activity. In his forecasts for the U.S. economy over the next year, Blair is quite bullish, for both the U.S. economy and the S&P 500 stock index. Blair believes that the U.S. economy will grow at 2% more than expected over the next year. He also states that labor productivity will be higher than expected, given increased productivity through the use of technological advances. He expects that these technological advances will result in higher earnings for U.S. firms over the next year and over the long run.

Reneau believes that the best S&P 500 option strategy to exploit Blair's forecast involves two options of the same maturity, one with a low exercise price, and the other with a high exercise price. The beginning stock price is usually below the two option strike prices. She states that the benefit of this strategy is that the maximum loss is limited to the difference between the two option prices.

Belanger is unsure that Blair's forecast is correct. He states that his own reading of the economy is for a continued holding pattern of low growth, with a similar projection for the stock market as a whole. He states that Damon and Damon may want to pursue an options strategy where a put and call of the same maturity and same exercise price are purchased. He asserts that such a strategy would have losses limited to the total cost of the two options.

Reneau and Belanger are also currently examining various positions in the options of Brendan Industries. Brendan Industries is a large-cap manufacturing firm with headquarters in the midwestern United States. The firm has both puts and calls sold on the Chicago Board Options Exchange. Their options have good liquidity for the near money puts and calls and for those puts and calls with maturities less than four months. Reneau believes that Brendan Industries will benefit from the economic expansion forecasted by Mark Blair, the Damon and Damon economist. She decides that the best option strategy to exploit these expectations is for her to pursue the same strategy she has delineated for the market as a whole.

Shares of Brendan Industries are currently trading at \$38. The following are the prices for their exchange-traded options.

<i>Option Type</i>	<i>Strike Price</i>	<i>Maturity</i>	<i>Price</i>
Call	\$35	30 days	\$4.50
Call	\$40	30 days	\$1.50
Put	\$35	30 days	\$1.80
Put	\$40	30 days	\$3.50

As a mature firm in a mature industry, Brendan Industries stock has historically had low volatility. However, Belanger's analysis indicates that with a lawsuit pending against Brendan Industries, the volatility of the stock price over the next 60 days is greater by several orders of magnitude than the implied volatility of the options. He believes that Damon and Damon

should attempt to exploit this projected increase in Brendan Industries' volatility by using an options strategy where a put and call of the same maturity and same exercise price are utilized. He advocates using the least expensive strategy possible.

During their discussions, Reneau cites a counter example to Brendan Industries from last year. She recalls that Nano Networks, a technology firm, had a stock price that stayed fairly stable despite expectations to the contrary. In this case, she utilized an options strategy where three different calls were used. Profits were earned on the strategy because Nano Networks' stock price stayed fairly stable. Even if the stock price had become volatile, losses would have been limited. Later that week, Reneau and Belanger discuss various credit option strategies during a lunch time presentation to Damon and Damon client portfolio managers. During their discussion, Reneau describes a credit option strategy that pays the holder a fixed sum, which is agreed upon when the option is written, and occurs in the event that an issue or issuer goes into default. Reneau declares that this strategy can take the form of either puts or calls. Belanger states that this strategy is known as either a credit spread call option strategy or a credit spread put option strategy.

Reneau and Belanger continue by discussing the benefits of using credit options. Reneau mentions that credit options written on an underlying asset will protect against declines in asset valuation. Belanger says that credit spread options protect against adverse movements of the credit spread over a referenced benchmark.

Regarding their comments concerning the credit option strategy that pays the holder a fixed sum, are Reneau and Belanger correct or incorrect?

- A. Only Belanger is correct.
- B. Only Reneau is correct.
- C. Both are correct -OR- both are incorrect.

**ANSWER: B**

**Explanation:**

Reneau is correct and Belanger is incorrect. Reneau is describing a binary credit option (not a credit spread option as Belanger states) with a predetermined payout. Binary credit options can take the form of either puts or calls. (Study Session 10, LOS 31.0)

**QUESTION NO: 2**

Albert Wulf, CFA, is a portfolio manager with Upsala Asset Management, a regional financial services firm that handles investments for small businesses in Northern Germany. For the most part, Wulf has been handling locally concentrated investments in European securities. Due to a lack of expertise in currency management he works closely with James Bauer, a foreign exchange expert who manages international exposure in some of Upsala's portfolios. Both individuals are committed to managing portfolio assets within the guidelines of client investment policy statements.

To achieve global diversification, Wulf's portfolio invests in securities from developed nations including the United States, Japan, and Great Britain. Due to recent currency market turmoil, translation risk has become a huge concern for Upsala's managers. The U.S. dollar has recently plummeted relative to the euro, while the Japanese yen and British pound have appreciated slightly relative to the euro. Wulf and Bauer meet to discuss hedging strategies that will hopefully mitigate some of the concerns regarding future currency fluctuations.

Wulf currently has a \$1,000,000 investment in a U.S. oil and gas corporation. This position was taken with the expectation that demand for oil in the U.S. would increase sharply over the short run. Wulf plans to exit this position 125 days from today. In order to hedge the currency exposure to the U.S. dollar, Bauer enters into a 90-day U.S. dollar futures contract, expiring in

September. Bauer comments to Wulf that this futures contract guarantees that the portfolio will not take any unjustified risk in the volatile dollar.

Wulf recently started investing in securities from Japan. He has been particularly interested in the growth of technology firms in that country. Wulf decides to make an investment of ¥25,000,000 in a small technology enterprise that is in need of start-up capital. The spot exchange rate for the Japanese yen at the time of the investment is ¥135/€. The expected spot rate in 90 days is ¥132/€. Given the expected appreciation of the yen, Bauer purchases put options that provide insurance against any depreciation of the euro. While delta-hedging this position, Bauer discovers that current at-the-money yen put options sell for €1 with a delta of -0.85. He mentions to Wulf that, in general, put options will provide a cheaper alternative to hedging than with futures since put options are only exercised if the local currency depreciates.

The exposure of Wulf's portfolio to the British pound results from a 180-day pound-denominated investment of £5,000,000. The spot exchange rate for the British pound is £0.78/€. The value of the investment is expected to increase to £5,100,000 at the end of the 180 day period. Bauer informs Wulf that due to the minimal expected exchange rate movement, it would be in the best interest of their clients, from a cost-benefit standpoint, to hedge only the principal of this investment.

Before entering into currency futures and options contracts, Wulf and Bauer discuss the possibility of also hedging market risk due to changes in the value of the assets. Bauer suggests that in order to hedge against a possible loss in the value of an asset Wulf should short a given foreign market index. Wulf is interested in executing index hedging strategies that are perfectly correlated with foreign investments. Bauer, however, cautions Wulf regarding the increase in trading costs that would result from these additional hedging activities.

Assuming Wulf and Bauer are successful in hedging both the foreign currency exposure and market risk exposure from the appreciation and depreciation of the asset, the expected return would be closest to:

- A. zero, since all risks have been hedged.
- B. the domestic risk-free rate.
- C. the foreign risk-free rate.

**ANSWER: B**

**Explanation:**

If Bauer shorts the appropriate amount of the index and the short position is perfectly correlated with the investment, the return must be the foreign risk-free rate. If Bauer then chooses to hedge the currency risk, he knows the exact value of the foreign currency to hedge and that the return to the (double) hedging strategy must be the domestic risk-free rate. (Study Session 15, LOS 42.g)

**QUESTION NO: 3**

Jack Higgins, CFA, and Tim Tyler, CFA, are analysts for Integrated Analytics (IA), a U.S.-based investment analysis firm. IA provides bond analysis for both individual and institutional portfolio managers throughout the world. The firm specializes in the valuation of international bonds, with consideration of currency risk. IA typically uses forward contracts to hedge currency risk. Higgins and Tyler are considering the purchase of a bond issued by a Norwegian petroleum products firm, Bergen Petroleum. They have concerns, however, regarding the strength of the Norwegian krone currency (Nkr) in the near term, and they want to investigate the potential return from hedged strategies. Higgins suggests that they consider forward contracts with the same maturity as the investment holding period, which is estimated at one year. He states that if IA expects the Norwegian Nkr to depreciate and that the Swedish krona (Sk) to appreciate, then IA should enter into a hedge where they sell Norwegian Nkr and buy Swedish Sk via a one-year forward contract. The Swedish Sk could then be converted to dollars at the spot rate in one year. Tyler states that if an investor cannot obtain a forward contract denominated in Norwegian Nkr and if the Norwegian Nkr and euro are positively correlated, then a forward contract should be entered

into where euros will be exchanged for dollars in one year. Tyler then provides Higgins the following data on risk-free rates and spot rates in Norway and the U.S., as well as the expected return on the Bergen Petroleum bond.

Return on Bergen Petroleum bond in Norwegian Nkr 7.00%

Risk-free rate in Norway 4.80%

Expected change in the Nkr relative to the U.S. dollar -0.40%

Risk-free rate in United States 2.50%

Higgins and Tyler discuss the relationship between spot rates and forward rates and comment as follows.

• Higgins: "The relationship between spot rates and forward rates is referred to as interest rate parity, where higher forward rates imply that a country's spot rate will increase in the future." • Tyler: "Interest rate parity depends on covered interest arbitrage which works as follows."

Suppose the 1-year U.K. interest rate is 5.5%, the 1-year Japanese interest rate is 2.3%, the Japanese yen is at a one-year forward premium of 4.1%, and transactions costs are minimal. In this case, the international trader should borrow yen, invest in pound denominated bonds, and use a yen-pound forward contract to pay back the yen loan."

The following day, Higgins and Tyler discuss various emerging market bond strategies and make the following statements.

• Higgins: "Over time, the quality in emerging market sovereign bonds has declined, due in part to contagion and the competitive devaluations that often accompany crises in emerging markets. When one country devalues their currency, others often quickly follow and as a result the countries default on their external debt, which is usually denominated in a hard currency." • Tyler: "Investing outside the index can provide excess returns. Because the most common emerging market bond index is concentrated in Latin America, the portfolio manager can earn an alpha by investing in emerging country bonds outside of this region."

Turning their attention to specific issues of bonds, Higgins and Tyler examine the characteristics of two bonds: a six-year maturity bond issued by the Midlothian Corporation and a twelve-year maturity bond issued by the Horgen Corporation. The Midlothian bond is a U.S. issue and the Horgen bond was issued by a firm based in Switzerland. The characteristics of each bond are shown in the table below. Higgins and Tyler discuss the relative attractiveness of each bond and, using a total return approach, which bond should be invested in, assuming a 1-year time horizon.

	Currency of Denomination	Annualized Bond Yield	Bond Modified Duration
Midlothian Bond	U.S. Dollars	8.00%	4.69
Horgen Bond	Swiss franc	9.00%	7.25

On the basis of expected return, should the Bergen Petroleum bond be hedged against currency risk and what is the hedged return?

- A. No; the hedged return is 4.70%.
- B. No; the hedged return is 6.60%.
- C. Yes; the hedged return is 6.60%.

**ANSWER: A****Explanation:**

The returns for the unhedged and hedged positions are calculated as follows. Assume the U.S. dollar is currency d and the Norwegian Nkr is currency f. The forward rate is denoted as F, and risk-free rates in each currency are denoted as i.

The unhedged return is the return on the bond plus the expected change in the Nkr:

$$= 7.00 - 0.40 = 6.60$$

To obtain the hedged return, we first calculate the approximate forward discount for the Norwegian Nkr relative to the domestic currency:

$$Fdf = id - if = 2.50 - 4.80 = -2.30$$

The hedged return is the return on the bond plus the forward discount for the Nkr:

$$= 7.00 - 2.30 = 4.70$$

The highest return is from the unhedged position. Assuming the investor is risk-neutral (i.e., is only concerned with return), the unhedged position should be taken. (Study Session 10, LOS 31.i)

**QUESTION NO: 4**

Bartholomew Hope, CFA, is the chief investment officer of Children's Trust Foundation (CTF), a foundation that supports a wide variety of child-related causes. CTFs total assets total \$2.3 billion.

The foundation's current asset mix is 55% stocks, 35% bonds, and 10% cash (T-bills earn 3.5%). The foundation provides \$126.5 million annually for a variety of programs for children, which is forecasted to remain more or less constant in real terms. Hope does not envision any major capital expenditures for the foreseeable future.

CTF's investment portfolio has underperformed its benchmark over the past three years. Hope believes corrective action is needed to address the issue of poor performance. Hope wants to evaluate the possibility the portfolio's risk to reward profile. Hope's staff generates Exhibit 1, which reviews the relevant necessary metrics to make the asset mix decision. The overall cost of investing the assets is 75 basis points.

Exhibit 1: Expected Returns, Risk, and Correlations for Asset under Consideration

	<i>Mean Return</i>	<i>Standard Deviation</i>	<i>Correlation</i>		
			<i>1</i>	<i>2</i>	<i>3</i>
Current portfolio	12.1%	10.0%	1.00		
Venture capital	11.4%	18.9%	0.50	1.00	
Hedge funds	13.5%	10.3%	0.75	0.25	1.00

One of the members of Hope's staff, Rene Meyer, includes a report on the key attributes of investing in venture capital funds. The report includes the following sections:



Structure: "Indirect venture capital investments are achieved by pooling the funds of multiple investors into a limited partnership (LP). The investors are limited partners who allow a general partner to control the investments for a period of 7 to 10 years. The general partner also invests capital, earning a management fee of 1.5% to 2.5% of invested capital and a carried interest fee, which is generally 20% of the fund profits, after the fund's hurdle rate has been met."

Strategy: "Because initial public offerings are a primary exit strategy of venture capital investing, the correlation between public equity markets and returns on venture capital investments are positive. Therefore, the primary focus of any venture capital investment undertaken by Glendale should be long-term return enhancement rather than significant diversification. In addition, Glendale must make sure that all of the committed capital is available for the required up front cash distribution to the general partner at the beginning of the investment period."

Hope recognizes there are several unique strategies within the hedge fund group that have very different risk to reward trade-offs. Hope identifies three hedge funds as potential investment opportunities for the CTF. Exhibit 2 lists the funds under consideration and their most recent securities transactions.

Exhibit 2: Hedge Fund Transactions

Fund X	Fund Y	Fund Z
Fund X purchased the stock of four companies within the chemical manufacturing industry while simultaneously selling short the stock of three companies in the transportation industry. The relative size of the trades left the fund with a net short exposure.	A long position was taken in Burg Inc., a grocery store chain. At the same time, a short position was taken in a second grocery store chain, TRE Corp. The overall beta of the trades was equal to 0.01 and the net investment was equal to zero.	Fund Z purchased a long position in an S&P 500 Index while simultaneously taking a short position in a broad based index tracking the Japanese market. Fund Z expected the S&P 500 to rise and the Japanese market to decline over the next year.

While Clark presents the hedge funds, Hope comments that he is concerned with the potential difficulties in measuring hedge fund manager performance. Glendale's charter has strict requirements regarding the performance assessment of investment managers who control the assets of the foundation. Hope believes the performance of alternative investments presented may be difficult to evaluate against a benchmark index as required by Glendale's charter.

Based on the data provided in Exhibit 1, determine whether adding venture capital or hedge funds to the CTF portfolio would allow the foundation to achieve a superior efficient frontier (Sharpe ratio calculations required).

- A. Add only the venture capital.
- B. Add only the hedge funds.
- C. Add both the venture capital and the hedge funds.

**ANSWER: B**

**Explanation:**

The appropriate comparison is the Sharpe ratio of the new asset class to the product of the Sharpe ratio of the existing portfolio and the correlation between the new asset and the existing portfolio.



$$\frac{\hat{R}_{new} - R_F}{\sigma_{new}} > \left[ \frac{\hat{R}_P - R_F}{\sigma_P} \right] \text{Corr}(R_{new}, R_P)$$

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$$\frac{0.114 - 0.035}{0.189} = 0.418 < 0.43 = \left( \frac{0.121 - 0.035}{0.1} \right) 0.50$$

Adding venture capital reduces the Sharpe ratio. Do not add venture capital.

$$\text{Hedge funds: } \frac{0.135 - 0.035}{0.103} = 0.917 > 0.645 = \left( \frac{0.121 - 0.035}{0.1} \right) 0.75$$

Adding hedge funds increases the Sharpe ratio. Add hedge funds.

(Study Session 13, LOS 37.f)

### QUESTION NO: 5

Walter Skinner, CFA, manages a bond portfolio for Director Securities. The bond portfolio is part of a pension plan trust set up to benefit retirees of Thomas Steel Inc. As part of the investment policy governing the plan and the bond portfolio, no foreign securities are to be held in the portfolio at any time and no bonds with a credit rating below investment grade are allowable for the bond portfolio. In addition, the bond portfolio must remain unleveraged. The bond portfolio is currently valued at \$800 million and has a duration of 6.50. Skinner believes that interest rates are going to increase, so he wants to lower his portfolio's duration to 4.50. He has decided to achieve the reduction in duration by using swap contracts. He has two possible swaps to choose from:

1. Swap A: 4-year swap with quarterly payments.
2. Swap B: 5-year swap with semiannual payments.

Skinner plans to be the fixed-rate payer in the swap, receiving a floating-rate payment in exchange. For analysis, Skinner always assumes the duration of a fixed rate bond is 75% of its term to maturity.

Several years ago, Skinner decided to circumvent the policy restrictions on foreign securities by purchasing a dual currency bond issued by an American holding company with significant operations in Japan. The bond makes semiannual fixed interest payments in Japanese yen but will make the final principal payment in U.S. dollars five years from now. Skinner originally purchased the bond to take advantage of the strengthening relative position of the yen. The result was an above average return for the bond portfolio for several years. Now, however, he is concerned that the yen is going to begin a weakening trend, as he expects inflation in the Japanese economy to accelerate over the next few years. Knowing Skinner's situation, one of his colleagues, Bill Michaels, suggests the following strategy:

"You need to offset your exposure to the Japanese yen by establishing a short position in a synthetic dual currency bond that matches the terms of the dual currency bond you purchased for the Thomas Steel bond portfolio. As part of the strategy, you will have to enter into a currency swap as the fixed-rate yen payer. The swap will neutralize the dual-currency bond position but will unfortunately increase the credit risk exposure of the portfolio."

Skinner has also spoken to Orval Mann, the senior economist with Director Securities, about his expectations for the bond portfolio. Mann has also provided some advice to Skinner in the following comment:

"I know you expect a general increase in interest rates, but I disagree with your assessment of the interest rate shift. I believe interest rates are going to decrease. Therefore, you will want to synthetically remove the call features of any callable bonds in your portfolio by purchasing a payer interest rate swaption."

Evaluate the appropriateness of Michaels' suggested strategy to offset the bond portfolio exposure to the dual currency bond, and also evaluate Michaels' assessment of the swap portion of the transaction.

- A. Michael's suggested strategy is appropriate, but his assessment of the swap portion is incorrect.
- B. Michael's suggested strategy is inappropriate, but his assessment of the swap portion is correct.
- C. Michael's suggested strategy is appropriate, and his assessment of the swap portion is correct.

**ANSWER: B**

**Explanation:**

Creating a shore position in a synthetic dual currency bond would require issuing a fixed rate bond denominated in dollars and then entering into a swap as the dollar receiver or equivalently, the Yen payer. Since the investment policy statement does not allow Skinner to leverage the portfolio, this strategy to offset the Yen exposure is inappropriate. Michaels' comment on the swap is correct, however. The synthetic dual-currency bond would require entering into the swap as a fixed-rate yen payer. It is also true that the swap would increase the credit risk of the portfolio. (Study Session 15. LOS 44. f)

**QUESTION NO: 6**

Joan Weaver, CFA and Kim McNally, CFA are analysts for Cardinal Fixed Income Management. Cardinal provides investment advisory services to pension funds, endowments, and other institutions in the U.S. and Canada. Cardinal recommends positions in investment-grade corporate and government bonds.

Cardinal has largely advocated the use of passive approaches to bond investments, where the predominant holding consists of an indexed or enhanced indexed bond portfolio. They are exploring, however, the possibility of using a greater degree of active management to increase excess returns. The analysts have made the following statements.

- Weaver: "An advantage of both enhanced indexing by matching primary risk factors and enhanced indexing by minor risk factor mismatching is that there is the potential for excess returns, but the duration of the portfolio is matched with that of the index, thereby limiting the portion of tracking error resulting from interest rate risk."
- McNally: "The use of active management by larger risk factor mismatches typically involves larger duration mismatches from the index, in an effort to capitalize on interest rate forecasts." As part of their increased emphasis on active bond management, Cardinal has retained the services of an economic consultant to provide expectations input on factors such as interest rate levels, interest rate volatility, and credit spreads. During his presentation, the economist states that he believes long-term interest rates should fall over the next year, but that short-term rates should gradually increase. Weaver and McNally are currently advising an institutional client that wishes to maintain the duration of its bond portfolio at 6.7. In light of the economic forecast, they are considering three portfolios that combine the following three bonds in varying amounts.

	Annualized Bond Yield	Bond Maturity in years	Semiannual Coupon Payment	Portfolio		
				1	2	3
Bond A	6.2%	5.25	\$3.10		50%	60%
Bond B	6.6%	8.50	\$3.30	100%		10%
Bond C	7.1%	19.75	\$3.55		50%	30%

Weaver and McNally next examine an investment in a semiannual coupon bond newly issued by the Manix Corporation, a firm with a credit rating of AA by Moody's. The specifics of the bond purchase are provided below given Weaver's projections. It is Cardinal's policy that bonds be evaluated for purchase on a total return basis.

Investment horizon	1 year
Cost of funds for Cardinal	9.00%
Bond maturity in years	20 years
Initial annualized bond yield	6.50%
Reinvestment rate for coupon	5.00%
Annual coupon rate paid semiannually	6.50%
Projected annualized yield to maturity at end of investment horizon	6.00%

One of Cardinal's clients, the Johnson Investment Fund (JIF), has instructed Weaver and McNally to recommend the appropriate debt investment for \$125,000,000 in funds. JIF is willing to invest an additional 15% of the portfolio using leverage. JIF requires that the portfolio duration not exceed 5.5. Weaver recommends that JIF invest in bonds with a duration of 5.2. The maximum allowable leverage will be used and the borrowed funds will have a duration of 0.8. JIF is considering investing in bonds with options and has asked McNally to provide insight into these investments. McNally makes the following comments:

"Due to the increasing sophistication of bond issuers, the amount of bonds with put options is increasing, and these bonds sell at a discount relative to comparable bullets. Putables are quite attractive when interest rates rise, but, we should be careful if with them, because valuation models often fail to account for the credit risk of the issuer."

Another client, Blair Portfolio Managers, has asked Cardinal to provide advice on duration management. One year ago, their portfolio had a market value of \$3,010,444 and a dollar duration of \$108,000; current figures are provided below:

	Market Value	Duration	Dollar Duration
Bond 1	\$940,000	3.8	\$35,720
Bond 2	\$820,000	2.8	\$22,960
Bond 3	\$780,000	4.7	\$36,660
Bond 4	\$621,000	3.5	\$21,735

Does Weaver's recommended investment for the Johnson Investment Fund violate the investment guidelines?



- A. No, the duration of the portfolio is 5.2.
- B. Yes, the duration of the portfolio is 5.9.
- C. Yes, the duration of the portfolio is 6.1.

**ANSWER: B****Explanation:**

The amount of leverage is  $\$125,000,000 \times 15\% = \$18,750,000$ . The total amount invested is Johnson's equity of \$125 million plus the \$18,750,000 borrowed, which equals \$143,750,000. The duration can be calculated with the following formula:

$$D_p = \frac{D_i \cdot B + E}{D_i \cdot B + E}$$

where:  $D_p$  = duration of portfolio  
 $D_i$  = duration of invested assets  
 $B$  = amount of invested funds  
 $E$  = amount of equity invested  
Using the above formula:

$$D_p = \frac{5.2 \cdot 18.75 + 125}{18.75 + 125} = 5.9$$

Note the use of leverage has resulted in the duration of the portfolio (5.9) being greater than the duration of invested assets (5.2).

This is higher than the required duration of 5.5, so the investment guidelines have been violated. (Study Session 10, LOS 31.a)

**QUESTION NO: 7**

Dakota Watson and Anthony Smith are bond portfolio managers for Northern Capital Investment

Advisors, which is based in the U.S. Northern Capital has \$2,000 million under management, with \$950 million of that in the bond market. Northern Capital's clients are primarily institutional investors such as insurance companies, foundations, and endowments. Because most clients insist on a margin over the relevant bond benchmark, Watson and Smith actively manage their bond portfolios, while at the same time trying to minimize tracking error.

One of the funds that Northern Capital offers invests in emerging market bonds. An excerpt from its prospectus reveals the following fund objectives and strategies:

"The fund generates a return by constructing a portfolio using all major fixed-income sectors within the Asian region (except Japan) with a bias towards non-government bonds. The fund makes opportunistic investments in both investment grade and high yield bonds. Northern Capital analysts seek those bond issues that are expected to outperform U.S. bonds with similar credit risk, interest rate risk, and liquidity risk-Value is added by finding those bonds that have been overlooked by other developed world bond funds. The fund favors non-dollar, local currency denominated securities to avoid the default risk associated with a lack of hard currency on the part of issuer."

Although Northern Capital does examine the availability of excess returns in foreign markets by investing outside the index in these markets, most of its strategies focus on U.S. bonds and spread analysis of them. Discussing the analysis of spreads in the U.S. bond market, Watson comments on the usefulness of the option adjusted spread and the swap spread and makes the following statements:

Statement 1: Due to changes in the structure of the primary bond market in the U.S., the option adjusted spread is increasingly valuable for analyzing the attractiveness of bond investments. Statement 2: The advantage of the swap spread framework is that investors can compare the relative attractiveness of fixed-rate and floating-rate bond markets.

Watson's view of the U.S. economy is decidedly bearish. She is concerned that the recent withdrawal of liquidity from the U.S. financial system will result in a U.S. recession, possibly even a depression. She forecasts that interest rates in the U.S. will continue to fall as the demand for loanable funds declines with the lack of business investment. Meanwhile, she believes that the Federal Reserve will continue to keep short-term rates low in order to stimulate the economy. Although she sees the level of yields declining, she believes that the spread on risky securities will increase due to the decline in business prospects. She therefore has reallocated her bond portfolio away from high-yield bonds and towards investment grade bonds.

Smith is less decided about the economy. However, his trading strategy has been quite successful in the past. As an example of his strategy, he recently sold a 20-year AA-rated \$50,000 Mahan Corporation bond with a 7.75% coupon that he had purchased at par. With the proceeds, he then bought a newly issued A-rated Quincy Corporation bond that offered an 8.25% coupon. By swapping the first bond for the second bond, he enhanced his annual income, which he considers quite favorable given the declining yields in the market.

Watson has become quite interested in the mortgage market. With the anticipated decline in interest rates, she expects that the yields on mortgages will decline. As a result, she has reallocated the portion of Northern Capital's bond portfolio dedicated to mortgages. She has shifted the holdings from 8.50% coupon mortgages to 7.75% coupon mortgages, reasoning that if interest rates do drop, the lower coupon mortgages will rise in price more than the higher coupon mortgages. She identifies this trade as a structure trade.

Smith is examining the liquidity of three bonds. Their characteristics are listed in the table below:

	<i>Issue Size</i>	<i>Coupon Rate</i>	<i>Term</i>	<i>Market</i>
<i>Bond A</i>	\$720 million	5.85%	10 years	Public Market
<i>Bond B</i>	\$1,600 million	6.13%	7 years	Public Market
<i>Bond C</i>	\$380 million	5.95%	20 years	Private Placement

Which of the following best describes the shortcoming of Smith's strategy?

- A. The yields on the Mahan Corporation bond could increase.
- B. The yields on the Quincy Corporation bond could increase.
- C. The liquidity of the Mahan Corporation bond is likely lower.

**ANSWER: B**

**Explanation:**

Smith is swapping bonds in order to obtain a higher yield. The Quincy Corporation bond has a yield that is 50 basis points higher. This describes a yield/spread pickup trade.

However, notice also that the Quincy Corporation bond has a lower credit rating, which probably accounts for its higher yield. Given its higher credit risk, its yield is more likely to rise in the future than the yield on the Mahan Corporation bond. If the yield on the Quincy bond does rise, its price will fall.

Smith has failed to evaluate the Quincy bond on a total return basis (i.e., he has not examined the return from both the yield and the potential change in price). If the yield on the Quincy bond rises high enough, its price could fall such that its total return is lower.

Note that it is probably true that the liquidity of the Mahan bond is lower because the Quincy bond is newly issued and newly issued bonds typically have higher liquidity. However, he has already sold the Mahan bond, so this is not a consideration. (Study Session 9, LOS 30.d)

**QUESTION NO: 8**

Jacques Lepage, CFA, is a portfolio manager for MontBlanc Securities and holds 4 million shares of AirCon in client portfolios. Lepage issues periodic research reports on AirCon to both discretionary and nondiscretionary accounts. In his October investment report, Lepage stated, "In my opinion, AirCon is entering a phase, which could put it 'in play' as a takeover target. Nonetheless, this possibility appears to be fully reflected in the market value of the stock." One month has passed since Lepage's October report and AirCon has just announced the firm's executive compensation packages, which include stock options (50% of which expire in one year), personal use of corporate aircraft (which can be used in conjunction with paid vacation days), and a modest base salary that constitutes a small proportion of the overall package. While he has not asked, he believes that the directors of MontBlanc will find the compensation excessive and sells the entire position immediately after the news. Unbeknownst to Lepage, three days earlier an announcement was made via Reuters and other financial news services that AirCon had produced record results that were far beyond expectations. Moreover, the firm has established a dominant position in a promising new market that is expected to generate above-average firm growth for the next five years.

A few weeks after selling the AirCon holdings, Lepage bought 2.5 million shares of Spectra Vision over a period of four days. The typical trading volume of this security is about 1.3 million shares per day, and his purchases drove the price up 9% over the 4-day period. These trades were designated as appropriate for 13 accounts of differing sizes, including performance-based accounts, charitable trusts, and private accounts. The shares were allocated to the accounts on a pro rata basis at the end of each day at the average price for the day.

One of the investment criteria used in evaluating equity holdings is the corporate governance structure of the issuing company. Because Lepage has dealt with this topic extensively, he has been asked to present a talk of corporate governance issues to the firm's portfolio managers and analysts at the next monthly meeting. At the meeting, Lepage makes the following comments: "When evaluating the corporate governance policies of a company, you should begin by assessing the responsibilities of the company's board of directors. In general, the board should have the responsibility to set long-term objectives that are consistent with shareholders' interests. In addition, the board must be responsible for hiring the CEO and setting his or her compensation package such that the CEO's interests are aligned with those of the shareholders. In that way the board can spend its time on matters other than monitoring the CEO. A firm with good corporate governance policies should also have an audit committee made up of independent board members that are experienced in auditing and related legal matters. The audit committee should have full access to the firm's financial statements and the ability to question auditors hired by the committee."

According to the CFA Institute Standards, Lepage's statement that AirCon could be put in play is:

- A. permissible.
- B. not permissible since it blurs the distinction between opinion and fact.
- C. permissible if he is aware that a client of MontBlanc's M&A division is secretly preparing a tender offer for AirCon.

**ANSWER: A****Explanation:**

According to Standard V(B) Communication with Clients and Prospective Clients, he is required to distinguish between fact and opinion in his research reports. He has fully conformed to this requirement. The statement is in accordance with CFA Institute Standards. (Study Session 1, LOS I.b)



**QUESTION NO: 9**

Pace Insurance is a large, multi-line insurance company that also owns several proprietary mutual funds. The funds are managed individually, but Pace has an investment committee that oversees all of the funds. This committee is responsible for evaluating the performance of the funds relative to appropriate benchmarks and relative to the stated investment objectives of each individual fund. During a recent investment committee meeting, the poor performance of Pace's equity mutual funds was discussed. In particular, the inability of the portfolio managers to outperform their benchmarks was highlighted. The net conclusion of the committee was to review the performance of the manager responsible for each fund and dismiss those managers whose performance had lagged substantially behind the appropriate benchmark.

The fund with the worst relative performance is the Pace Mid-Cap Fund, which invests in stocks with a capitalization between \$40 billion and \$80 billion. A review of the operations of the fund found the following:

- The turnover of the fund was almost double that of other similar style mutual funds.
- The fund's portfolio manager solicited input from her entire staff prior to making any decision to sell an existing holding.
- The beta of the Pace Mid-Cap Fund's portfolio was 60% higher than the beta of other similar style mutual funds.
- No stock is considered for purchase in the Mid-Cap Fund unless the portfolio manager has 15 years of financial information on that company, plus independent research reports from at least three different analysts.
- The portfolio manager refuses to increase her technology sector weighting because of past losses the fund incurred in the sector.
- The portfolio manager sold all the fund's energy stocks as the price per barrel of oil rose above \$80. She expects oil prices to fall back to the \$40 to \$50 per barrel range.

A committee member made the following two comments:

Comment 1: "One reason for the poor recent performance of the Mid-Cap Mutual Fund is that the portfolio lacks recognizable companies. I believe that good companies make good investments." Comment 2: "The portfolio manager of the Mid-Cap Mutual Fund refuses to acknowledge her mistakes. She seems to sell stocks that appreciate, but hold stocks that have declined in value."

The supervisor of the Mid-Cap Mutual Fund portfolio manager made the following statements: Statement 1: "The portfolio manager of the Mid-Cap Mutual Fund has engaged in quarter-end window dressing to make her portfolio look better to investors. The portfolio manager's action is a behavioral trait known as over-reaction."

Statement 2: "Each time the portfolio manager of the Mid-Cap Mutual fund trades a stock, she executes the trade by buying or selling one-third of the position at a time, with the trades spread over three months. The portfolio manager's action is a behavioral trait known as anchoring."

The committee member's comment 2 suggests that the manager of the Pace Mid-Cap Fund suffers from:

- A. loss aversion.
- B. hindsight bias.
- C. money illusion.

**ANSWER: A****Explanation:**

By selling a stock that has declined in value, the manager would be accepting a loss. By hanging on to these poor performing stocks, the manager is avoiding any admission of an error on her part, and is demonstrating loss aversion. Money illusion refers to underestimating the effects of inflation by focusing on nominal returns rather than real (inflation-adjusted) returns. (Study Session 3, LOS 8.a)

### QUESTION NO: 10

Donaghy Management Company (DMC) manages several funds only available to high net worth individuals. In preparation for an upcoming meeting, the firm has circulated among its managers the information in Figure 1 on objectives and market expectations relevant to each of three funds.

The manager of Fund A has collected data on put and call options on the broad market index underlying his strategy. The option data are presented in Figure 2. All options presented have the same expiration date.

Figure 2: Option Data for the Broad Market Index

<i>Call Price</i>	<i>Strike Price</i>	<i>Put Price</i>
35.40	1,475	6.80
18.10	1,500	17.00
7.90	1,515	24.60

During the meeting, the manager of Fund B states that in order to enhance returns for the fund, he intends to implement a box-spread strategy. The manager explains the strategy by stating, "The ending price of the asset underlying the box-spread strategy has no impact on the payoff of the strategy."

Thus, if the market price of the strategy implies a rate of return greater than the risk-free rate, an arbitrage opportunity exists."

Also during the meeting, DMC's president questioned the manager of Fund C about the mechanics of his hedging strategy. The manager explained the strategy with the following comments:

Comment 1: "The hedge position is established to reduce the exposure to certain equity positions by writing call options on those equity positions. The necessary number of short option positions per share of stock held is calculated as the inverse of the option delta."

Comment 2: "The hedge position only requires adjusting in the event of a price or volatility change in the underlying and is effective for small changes in the price of the underlying security."

Determine whether the comments made by the manager of Fund C with respect to determining the hedge position and adjusting the hedge position are correct.

A. Only Comment 1 is correct.

B. Only Comment 2 is correct.

C. Both Comment 1 and Comment 2 are correct.

**ANSWER: A****Explanation:**

The manager of Fund C is correct regarding the method of determining the delta hedge position (Comment 1), but is not correct regarding adjustments to the delta hedge position (Comment 2). In a delta hedge, a short position in call options is offset with a long position in the underlying security (or vice versa). The delta of the option is used as the hedge ratio and is approximately equal to the change in option price divided by the change in the price of the underlying security. The number of shares of stock to purchase to establish the delta hedged position is calculated as:

$$\text{\#Short Call Options} \times \text{Option Delta} = \text{\#Shares to Purchase}$$

Rearranging the equation, we see that the option delta can be thought of as the number of shares to purchase per call option sold short.

$$\text{Option Delta} = \text{\#Shares to Purchase} / \text{\#Short Call Options}$$

Since Fund C already holds positions in the shares of the underlying securities, the manager will need to write the call options. We can rearrange the equation above one more time to determine that the number of call options to short per share of the underlying held is equal to the inverse of the option delta.

$$\text{\#Short Call Options} / \text{\#Shares to Purchase} = 1 / \text{Option Delta}$$



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	<i>Fund A</i>	<i>Fund B</i>	<i>Fund C</i>
<b>Objectives</b>	Predict and profit from volatility in the equity market using options on a broad equity index.	Market neutral fund with offsetting long and short equity positions. The fund utilizes leverage to enhance returns.	Long only international equity fund. Individual securities may be delta hedged using call options to reduce exposure to the position without selling it.
<b>Market Expectations</b>	Volatility in the equity market is expected to increase in the near future. However, the direction of the volatility is not known.	Credit markets are expected to tighten in the near future. Increased interest rates are expected across all credit qualities.	International equity markets are forecasted to rise in general. Certain securities are forecast to decline in value temporarily.

**QUESTION NO: 11**

Geneva Management (GenM) selects long-only and long-short portfolio managers to develop asset allocation recommendations for their institutional clients.

GenM Advisor Marcus Reinhart recently examined the holdings of one of GenM's long-only portfolios actively managed by Jamison Kiley. Reinhart compiled the holdings for two consecutive non-overlapping five year periods. The Morningstar Style Boxes for the two periods for Kiley's portfolio are provided in Exhibits 1 and 2.

Exhibit 1: Morningstar Style Box: Long-Only Manager for Five-Year Period 1

	Value	Blend	Growth
Large-cap	20	30	40
Mid-cap	2	3	5
Small-cap	0	0	0

Exhibit 2: Morningstar Style Box: Long-Only Manager for Five-Year Period 2

	Value	Blend	Growth
Large-cap	45	30	20
Mid-cap	1	2	2
Small-cap	0	0	0

Reinhart contends that the holdings-based analysis might be flawed because Kiley's portfolio holdings are known only at the end of each quarter. Portfolio holdings at the end of the reporting period might misrepresent the portfolio's average composition. To compliment his holdings-based analysis, Reinhart also conducts a returns-based style analysis on Kiley's portfolio. Reinhart selects four benchmarks:

1. SCV: a small-cap value index.
2. SCG: a small-cap growth index.
3. LCV: a large-cap value index.
4. LCG: a large-cap growth index.

Using the benchmarks, Reinhart obtains the following regression results:

Period 1:  $R_p = 0.02 + 0.01(SCV) + 0.02(SCG) + 0.36(LCV) + 0.61(LCG)$

Period 2:  $R_p = 0.02 + 0.01(SCV) + 0.02(SCG) + 0.60(LCV) + 0.38(LCG)$

Kiley's long-only portfolio is benchmarked against the S&P 500 Index. The Index's current sector allocations are shown in Exhibit 3.

Exhibit 3: S&amp;P 500 Index Sector Allocations

Sector	Percent Allocation
Energy	12
Materials	3
Industrials	11
Consumer Discretionary	9
Consumer Staples	10
Health Care	12
Financials	19
Information Technology	17
Telecommunications	4
Utilities	3

GenM strives to select managers whose correlation between forecast alphas and realized alphas has been fairly high, and to allocate funds across managers in order to achieve alpha and beta separation. GenM gives Reinhart a mandate to pursue a core-satellite strategy with a small number of satellites each focusing on a relatively few number of securities.

In response to the core-satellite mandate, Reinhart explains that a Completeness Fund approach offers two advantages:

Advantage 1: The Completeness Fund approach is designed to capture the stock selecting ability of the active manager, while matching the overall portfolio's risk to its benchmark.

Advantage 2: The Completeness Fund approach allows the Fund to fully capture the value added from active managers by eliminating misfit risk.

Which one of the following statements about Kiley's long-only portfolio is most correct? Kiley's portfolio:

- A. is only exposed to systematic risk.
- B. is only exposed to unsystematic risk.
- C. attempts to earn a positive alpha through security selection.

**ANSWER: C**

**Explanation:**

The way a long-only portfolio earns a positive alpha is through the selection of undervalued securities. Stock selection is how Kiley generates his performance. Kiley's portfolio is potentially exposed to both systematic and unsystematic risk. (Study Session II.LOS33.rn)

**QUESTION NO: 12**



William Bliss, CFA, runs a hedge fund that uses both managed futures strategies and positions in physical commodities. He is reviewing his operations and strategies to increase the return of the fund. Bliss has just hired Joseph Kanter, CFA, to help him manage the fund because he realizes that he needs to increase his trading activity in futures and to engage in futures strategies other than fully hedged, passively managed positions. Bliss also hired Kanter because of Kanter's experience with swaps, which Bliss hopes to add to his choice of investment tools.

Bliss explains to Kanter that his clients pay 2% on assets under management and a 20% incentive fee. The incentive fee is based on profits after having subtracted the risk-free rate, which is the fund's basic hurdle rate, and there is a high water mark provision. Bliss is hoping that Kanter can help his business because his firm did not earn an incentive fee this past year. This was the case despite the fact that, after two years of losses, the value of the fund increased 14% during the previous year. That increase occurred without any new capital contributed from clients. Bliss is optimistic about the near future because the term structure of futures prices is particularly favorable for earning higher returns from long futures positions.

Kanter says he has seen research that indicates inflation may increase in the next few years. He states this should increase the opportunity to earn a higher return in commodities and suggests taking a large, margined position in a broad commodity index. This would offer an enhanced return that would attract investors holding only stocks and bonds. Bliss mentions that not all commodity prices are positively correlated with inflation so it may be better to choose particular types of commodities in which to invest. Furthermore, Bliss adds that commodities traditionally have not outperformed stocks and bonds either on a risk-adjusted or absolute basis. Kanter says he will research companies who do business in commodities, because buying the stock of those companies to gain commodity exposure is an efficient and effective method for gaining indirect exposure to commodities.

Bliss agrees that his fund should increase its exposure to commodities and wants Kanter's help in using swaps to gain such exposure. Bliss asks Kanter to enter into a swap with a relatively short horizon to demonstrate how a commodity swap works. Bliss notes that the futures prices of oil for six months, one year, eighteen months, and two years are \$55, \$54, \$52, and \$51 per barrel, respectively, and the risk-free rate is less than 2%.

Bliss asks how a seasonal component could be added to such a swap. Specifically, he asks if either the notional principal or the swap price can be higher during the reset closest to the winter season and lower for the reset period closest to the summer season. This would allow the swap to more effectively hedge a commodity like oil, which would have a higher demand in the winter than the summer. Kanter says that a swap can only have seasonal swap prices, and the notional principal must stay constant. Thus, the solution in such a case would be to enter into two swaps, one that has an annual reset in the winter and one that has an annual reset in the summer.

Given the information, the most likely reason that Bliss's firm did not earn an incentive fee in the past year was because:

- A. the normal return was subtracted.
- B. the 2% asset-under-management fee is greater than the risk-free rate.
- C. of a high water mark provision, which states the value of the fund must exceed its previous high point before managers are paid an incentive fee.

**ANSWER: C**

**Explanation:**

The only possible answer from the given reasons is a high water mark provision. Since the firm had experienced losses for two years before increasing in value in the previous year, it is likely that the value of the fund had yet to achieve a previous "high water mark" that it must exceed in order for there to be an earned incentive fee. (Study Session 13. LOS 37.q)

**QUESTION NO: 13**

Walter Skinner, CFA, manages a bond portfolio for Director Securities. The bond portfolio is part of a pension plan trust set up to benefit retirees of Thomas Steel Inc. As part of the investment policy governing the plan and the bond portfolio, no foreign securities are to be held in the portfolio at any time and no bonds with a credit rating below investment grade are allowable for the bond portfolio. In addition, the bond portfolio must remain unleveraged. The bond portfolio is currently valued at \$800 million and has a duration of 6.50. Skinner believes that interest rates are going to increase, so he wants to lower his portfolio's duration to 4.50. He has decided to achieve the reduction in duration by using swap contracts. He has two possible swaps to choose from:

1. Swap A: 4-year swap with quarterly payments.
2. Swap B: 5-year swap with semiannual payments.

Skinner plans to be the fixed-rate payer in the swap, receiving a floating-rate payment in exchange. For analysis, Skinner always assumes the duration of a fixed rate bond is 75% of its term to maturity.

Several years ago, Skinner decided to circumvent the policy restrictions on foreign securities by purchasing a dual currency bond issued by an American holding company with significant operations in Japan. The bond makes semiannual fixed interest payments in Japanese yen but will make the final principal payment in U.S. dollars five years from now. Skinner originally purchased the bond to take advantage of the strengthening relative position of the yen. The result was an above average return for the bond portfolio for several years. Now, however, he is concerned that the yen is going to begin a weakening trend, as he expects inflation in the Japanese economy to accelerate over the next few years. Knowing Skinner's situation, one of his colleagues, Bill Michaels, suggests the following strategy:

"You need to offset your exposure to the Japanese yen by establishing a short position in a synthetic dual currency bond that matches the terms of the dual currency bond you purchased for the Thomas Steel bond portfolio. As part of the strategy, you will have to enter into a currency swap as the fixed-rate yen payer. The swap will neutralize the dual-currency bond position but will unfortunately increase the credit risk exposure of the portfolio."

Skinner has also spoken to Orval Mann, the senior economist with Director Securities, about his expectations for the bond portfolio. Mann has also provided some advice to Skinner in the following comment:

"I know you expect a general increase in interest rates, but I disagree with your assessment of the interest rate shift. I believe interest rates are going to decrease. Therefore, you will want to synthetically remove the call features of any callable bonds in your portfolio by purchasing a payer interest rate swaption."

Determine the approximate notional principal required for Skinner to achieve a portfolio duration of 4.5 using Swap B.

- A. \$320 million.
- B. \$457 million.
- C. \$492 million.

**ANSWER: B**

**Explanation:**

The duration of Swap B, a pay fixed/receive floating swap for five years with semiannual payments, would be equal to the duration of a 5-year floating rate bond with semiannual payments minus the duration of a 5-year fixed rate bond with semiannual payments. The duration of the 5-year floating rate bond would be one-half of the payment interval, or  $0.5 \times 0.5 = 0.25$ . The duration of the 5-year fixed rate bond would be 75% of five years, or 3.75. Therefore the swap duration will be  $0.25 - 3.75 = -3.50$ .

The required notional principal to achieve a portfolio duration of 4.5 using Swap B would be:

$$NP = VP[(MDT - MDP) / MD_{\text{swap}}] = \$800M \times [(4.5 - 6.5) / -3.5] = \$457M$$

(Study Session L5, LOS 44.d)

**QUESTION NO: 14**

Walter Skinner, CFA, manages a bond portfolio for Director Securities. The bond portfolio is part of a pension plan trust set up to benefit retirees of Thomas Steel Inc. As part of the investment policy governing the plan and the bond portfolio, no foreign securities are to be held in the portfolio at any time and no bonds with a credit rating below investment grade are allowable for the bond portfolio. In addition, the bond portfolio must remain unleveraged. The bond portfolio is currently valued at \$800 million and has a duration of 6.50. Skinner believes that interest rates are going to increase, so he wants to lower his portfolio's duration to 4.50. He has decided to achieve the reduction in duration by using swap contracts. He has two possible swaps to choose from:

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Several years ago, Skinner decided to circumvent the policy restrictions on foreign securities by purchasing a dual currency bond issued by an American holding company with significant operations in Japan. The bond makes semiannual fixed interest payments in Japanese yen but will make the final principal payment in U.S. dollars five years from now. Skinner originally purchased the bond to take advantage of the strengthening relative position of the yen. The result was an above average return for the bond portfolio for several years. Now, however, he is concerned that the yen is going to begin a weakening trend, as he expects inflation in the Japanese economy to accelerate over the next few years. Knowing Skinner's situation, one of his colleagues, Bill Michaels, suggests the following strategy:

"You need to offset your exposure to the Japanese yen by establishing a short position in a synthetic dual currency bond that matches the terms of the dual currency bond you purchased for the Thomas Steel bond portfolio. As part of the strategy, you will have to enter into a currency swap as the fixed-rate yen payer. The swap will neutralize the dual-currency bond position but will unfortunately increase the credit risk exposure of the portfolio."

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After his long conversation with Director Securities' senior economist, Orval Mann, Skinner has completely changed his outlook on interest rates and has decided to extend the duration of his portfolio. The most appropriate strategy to accomplish this objective using swaps would be to enter into a swap to pay:

- A. fixed and receive floating.
- B. floating and receive fixed.
- C. floating and receive floating.

**ANSWER: B****Explanation:**

To increase the duration of the portfolio. Skinner would want to hold a position that moved inversely with interest rates (i.e., decreases in value as interest rates increase). The swap position that accomplishes this objective is a pay floating/receive fixed. As interest rates decrease, Skinner would receive the same fixed payments but would pay out lower floating rate payments. (Study Session 15, LOS 44.b)

### QUESTION NO: 15 - (SIMULATION)

#### SIMULATION

The local bank trust department also custodies the Finnegan's taxable \$1.5 million inheritance account, but for this account Sara Finnegan directs all the trades. Ms. Finnegan expresses her social priorities through her financial investments. She deliberately excludes tobacco, defense, oil and gas, and chemical companies from her universe of potential investments and she is obsessed with tax minimization. The Finnegan's do not want to pay the government one dollar more than is required. Ms. Finnegan's portfolio allocation is shown in Exhibit 2.

Exhibit 2: Finnegan's Portfolio

<i>Investments</i>	<i>Weighting</i>	<i>Cost Basis</i>	<i>Current Price</i>	<i>Current Yield</i>	<i>Expected Capital Appreciation</i>	<i>Expected Standard Deviation</i>
Cash	1%			1.0%	0%	1%
Municipal Bond Fund	50%	\$12.40	\$12.40	5.0%	0%	5%
Domestic Equity Income	4%	\$18.00	\$22.00	4.0%	12%	13%
<i>Individual domestic stocks:</i>						
Solar Power	7%	\$10.00	\$35.00	0.0%	35%	40%
Biotech Inc.	7%	\$30.00	\$13.00	0.0%	30%	36%
The Drug Company	7%	\$75.00	\$80.00	2.0%	20%	28%
Chip Design	7%	\$58.00	\$20.00	1.0%	22%	22%
Conglomerate Inc.	7%	\$28.00	\$70.00	4.0%	10%	13%
International Stock Fund	10%	\$14.00	\$30.00	3.0%	8%	18%

Ms. Finnegan is passionate about animals. Her activism has led the Finnegan's to become involved with the Spay Neuter Action Project (SNAP). The Finnegan's are providing a charitable donation to SNAP. It is their intention to bequest the stock of Conglomerate Inc. to the organization. They also hope to use the growth in the portfolio's assets to make additional contributions of similar size as often as possible.



From the information provided, indicate one item that would affect Sara's ability to tolerate risk and one item that would affect her willingness to tolerate risk and explain each with one reason. Template for Question

**ANSWER: See explanation below**

**Explanation:**

6 points: 1 point for each reason and 2 points for each discussion.(Study Session A, LOS 14.j.i)

Risk Tolerance	Comments
Ability	<p>For the exam:</p> <ol style="list-style-type: none"> <li>1. Portfolio must fund all living expenses: high liquidity needs translate into reduced ability to tolerate risk.</li> <li>2. Portfolio must meet expenses for father: portfolio losses would put level of father's care in jeopardy.</li> </ol> <p>Discussion:</p> <p>The need to fund the substantial nursing home expenses of Joe's father will require the portfolio to maintain sufficient liquidity and the need to pay all living expenses generally means the risk level of the portfolio should be moderate at best.</p>
Willingness	<p>For the exam:</p> <ol style="list-style-type: none"> <li>1. Makes own investment decisions: not afraid to do own research and make own decisions</li> <li>2. Holds individual stocks: small number of individual stocks increases risk.</li> </ol> <p>Discussion:</p> <p>Sara makes all the investment decisions for the portfolio, so the 35% invested in the five stocks indicates her willingness to accept the risk associated with her decisions.</p>