



Free Questions for CFA-Level-II by dumpssheet

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Question 1

Question Type: MultipleChoice

James Walker is the Chief Financial Officer for Lothar Corporation, a U.S. mining company that specializes in worldwide exploration for and excavation of precious metals. Lothar Corporation generally tries to maintain a debt-to-capital ratio of approximately 45% and has successfully done so for the past seven years. Due to the time lag between the discovery of an extractable vein of metal and the eventual sale of the excavated material, the company frequently must issue short-term debt to fund its operations. Issuing these one to six month notes sometimes pushes Lothar's debt to capital ratio above their long-term target, but the cash provided from the short-term financing is necessary to complete the majority of the company's mining projects.

Walker has estimated that extraction of silver deposits in southern Australia has eight months until project completion. However, funding for the project will run out in approximately six months. In order to cover the funding gap, Walker will have to issue short-term notes with a principal value of \$1,275,000 at an unknown future interest rate. To mitigate the interest rate uncertainty, Walker has decided to enter into a forward rate agreement (FRA) based on LIBOR which currently has a term structure as shown in Exhibit 1.

Exhibit 1		Exhibit 2	
<i>LIBOR Rates on July 1</i>		<i>LIBOR Rates on October 1</i>	
	LIBOR		LIBOR
90 Day	4.28%	90 Day	5.12%
180 Day	4.52%	150 Day	5.96%
240 Day	5.11%	210 Day	6.03%
360 Day	5.92%	300 Day	6.41%

Three months after establishing the position in the forward rate agreement, LIBOR interest rates have shifted causing the value of Lothar's FRA position to change as well. The new LIBOR term structure is shown in Exhibit 2.

While Walker is estimating the change in the value of the original FRA position, he receives a memo from the Chief Operating Officer of Lochar Corporation, Maria Steiner, informing him of a major delay in one of the company's South African mining projects. In the memo, Steiner states the following: "As usual, the project delay will require a short-term loan to cover funding shortage that will accompany the extra time until project completion. I have estimated that in 210 days, we will require a 90-day project loan in the amount of \$2,350,000. I would like you to establish another FRA position, this time with a contract rate of 6.95%."

When the silver is removed from the mine, it will be sold to an Australian subsidiary before being exported. Walker is concerned that the price of silver and the Australian dollar will both depreciate over the next eight months. Which of the following strategies will be most appropriate given Walker's expectations? Establish a:

Options:

- A- short position in a silver forward contract and a short position in a U.S. dollar currency forward contract.
- B- long position in a silver forward contract and a short position in an Australian dollar currency forward contract.
- C- short position in a silver forward contract and a long position in a U.S. dollar currency forward contract.

Answer:

C

Explanation:

The company will need to sell silver in eight months. Thus, if the price of silver is expected to fall over that time frame, Walker should be short a forward contract on the price of silver to lock in a higher selling price now. Walker will also need to convert Australian dollars to U.S. dollars after the extracted Australian silver is sold. Thus, he is effectively long Australian dollars and will need either a short currency forward contract on Australian dollars or equivalently a long currency forward contract on U.S. dollars if he expects the Australian dollar to depreciate. (Study Session 16, LOS 58.a)

Question 2

Question Type: MultipleChoice

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Which of the following statements regarding the credit risk associated with Walker's original FRA contract three months after the inception of the contract is least accurate?

Options:

- A- Credit risk to all parties could be reduced to zero by marking the FRA to market.
- B- The clearinghouse will have the greatest exposure to credit risk.
- C- Credit risk to the long position will be greater than the credit risk to the short position.

Answer:

B

Explanation:

In forward markets, there is no clearinghouse. Forward contracts are between two private entities, and as such, the credit risk is borne by the party with a positive contract position. In Walker's case, since the contract has positive value three months after inception, he is

exposed to the risk that the short position will be unable to make the required payment at the contract expiration. This problem could be alleviated through periodically marking the contract to market. Mark-to-market features are not common to all forward contracts but can be included if so desired by the parties entering into the contract. (Study Session 16, LOS 58.d)

Question 3

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Walker has estimated that extraction of silver deposits in southern Australia has eight months until project completion. However, funding for the project will run out in approximately six months. In order to cover the funding gap, Walker will have to issue short-term notes with a principal value of \$1,275,000 at an unknown future interest rate. To mitigate the interest rate uncertainty, Walker has decided to enter into a forward rate agreement (FRA) based on LIBOR which currently has a term structure as shown in Exhibit 1.

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Which of the following is closest to the value of the forward rate agreement three months after the inception of the contract (from Walker's perspective)? For this question only, assume that the interest rate at inception was 6.0%.

Options:

A- \$2,239.

B- \$2,266.

C- \$2,295.

Answer:

A

Explanation:

For this question, we must find the value of the FRA 3 months or 90 days after the inception of the contract. First find the contract rate on a new FRA . Since we are 90 days past the inception of the original contract an equivalent new contract would be a 3 x 5 FRA, which would represent a 2 month (60 day) loan that would begin three months (90 days) from now. Thus, the relevant LIBOR rates are going to be 90-day and 150-day LIBOR. Calculate the FRA rate the same way as in the previous question:

$$R_{90} = 0.0512 \left(\frac{90}{360} \right) = 0.0128 \quad R_{150} = 0.0596 \left(\frac{150}{360} \right) = 0.0248$$

$$FRA_{3 \times 5} = \left(\frac{1 + R_{150}}{1 + R_{90}} \right) - 1 = \left(\frac{1.0248}{1.0128} \right) - 1 = 0.0118$$

$$FRA_{3 \times 5} = 0.0118 \left(\frac{360}{60} \right) = 0.0708 = 7.08\%$$

Now take the difference between the new FRA rate and the original rate (given as 6 in the question) on an un-annualized basis and multiply by the notional principal (i.e., the amount that will be borrowed).

$$\left[(0.0708 - 0.06) \left(\frac{60}{360} \right) \right] \times \$1,275,000 = \$2,295$$

Finally, discount this difference to the present using the 150 day LIBOR rate.

$$\frac{\$2,295}{1 + \left(0.0596 \times \frac{150}{360} \right)} = \$2,239$$

(Study Session 16,105 58.0)

Question 4

Question Type: MultipleChoice

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Walker has estimated that extraction of silver deposits in southern Australia has eight months until project completion. However, funding for the project will run out in approximately six months. In order to cover the funding gap, Walker will have to issue short-term notes with a principal value of \$1,275,000 at an unknown future interest rate. To mitigate the interest rate uncertainty, Walker has decided to enter into a forward rate agreement (FRA) based on LIBOR which currently has a term structure as shown in Exhibit 1.

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Walker has decided to enter into a forward rate agreement (FRA). Which of the following is closest to the price of the FRA on the date of the contract's inception?

Options:

- A- 4.7%.
- B- 6.8%.
- C- 7.2%.

Answer:

B

Explanation:

Walker is entering into a 6 x 8 forward rate agreement (FRA), which represents a two month (60 day) loan that will begin six months (180 days) from now. The relevant LIBOR rates for this contract are 180-day and 240-day LIBOR. To calculate the contract rate on the 6 x 8

FRA, first un-annualize the 180- and 240-day rates as follows:

$$R_{180} = 0.0452 \left(\frac{180}{360} \right) = 0.0226 \qquad R_{240} = 0.0511 \left(\frac{240}{360} \right) = 0.0341$$

Next, calculate the rate on the 6 x 8 FRA as follows (note we are using the 180-day and 240-day LIBOR rates to find the 60-day rate that lies between them):

$$FRA_{6 \times 8} = \left(\frac{1 + R_{240}}{1 + R_{180}} \right) - 1 = \left(\frac{1.0341}{1.0226} \right) - 1 = 0.0112$$

The 0.0112 or 1.12% rate represents a 60 day rate. Annualizing the rate will yield the following:

$$FRA_{6 \times 8} = 0.0112 \left(\frac{360}{60} \right) = 0.0675 = 6.75\% \approx 6.8\%$$

(Study Session 16, LOS 58.C)

Question 5

Question Type: MultipleChoice

Michelle Norris, CFA, manages assets for individual investors in the United States as well as in other countries. Norris limits the scope of her practice to equity securities traded on U.S. stock exchanges. Her partner, John Witkowski, handles any requests for international securities. Recently, one of Norris's wealthiest clients suffered a substantial decline in the value of his international portfolio. Worried that

his U.S. allocation might suffer the same fate, he has asked Norris to implement a hedge on his portfolio. Norris has agreed to her client's request and is currently in the process of evaluating several futures contracts. Her primary interest is in a futures contract on a broad equity index that will expire 240 days from today. The closing price as of yesterday, January 17, for the equity index was 1,050. The expected dividends from the index yield 2% (continuously compounded annual rate). The effective annual risk-free rate is 4.0811%, and the term structure is flat. Norris decides that this equity index futures contract is the appropriate hedge for her client's portfolio and enters into the contract.

Upon entering into the contract, Norris makes the following comment to her client:

"You should note that since we have taken a short position in the futures contract, the price we will receive for selling the equity index in 240 days will be reduced by the convenience yield associated with having a long position in the underlying asset. If there were no cash flows associated with the underlying asset, the price would be higher. Additionally, you should note that if we had entered into a forward contract with the same terms, the contract price would most likely have been lower but we would have increased the credit risk exposure of the portfolio."

Sixty days after entering into the futures contract, the equity index reached a level of 1,015. The futures contract that Norris purchased is now trading on the Chicago Mercantile Exchange for a price of 1,035. Interest rates have not changed. After performing some calculations, Norris calls her client to let him know of an arbitrage opportunity related to his futures position. Over the phone, Norris makes the following comments to her client:

"We have an excellent opportunity to earn a riskless profit by engaging in arbitrage using the equity index, risk-free assets, and futures contracts. My recommended strategy is as follows: We should sell the equity index short, buy the futures contract, and pay any dividends occurring over the life of the contract. By pursuing this strategy, we can generate profits for your portfolio without incurring any risk."

Sixty days after the inception of the futures contract on the equity index, Norris has suggested an arbitrage strategy. Evaluate the appropriateness of the strategy. The strategy is:

Options:

- A- appropriate since the futures contract is underpriced.
- B- inappropriate since the futures contract is overpriced.
- C- inappropriate since the futures contract is properly priced in the market

Answer:

B

Explanation:

First, calculate the continuously compounded risk-free rate as $\ln(1.040811) = 4\%$ and then calculate the theoretically correct futures price as follows:

$$FP = S_0 e^{(r-d)t} = 1,015 e^{(4.0-2.0)(180/365)} = 1,025$$

Then, compare the theoretical price to the observed market price: $1.035 - 1,025 = 10$. The futures contract is overpriced. To take advantage of the arbitrage opportunity, the investor should sell the (overpriced) futures contract and buy the underlying asset (the equity index) using borrowed funds. Norris has suggested the opposite. (Study Session 16, LOS 59.f)

Question 6

Question Type: MultipleChoice

Michelle Norris, CFA, manages assets for individual investors in the United States as well as in other countries. Norris limits the scope of her practice to equity securities traded on U.S. stock exchanges. Her partner, John Witkowski, handles any requests for international securities. Recently, one of Norris's wealthiest clients suffered a substantial decline in the value of his international portfolio. Worried that his U.S. allocation might suffer the same fate, he has asked Norris to implement a hedge on his portfolio. Norris has agreed to her client's request and is currently in the process of evaluating several futures contracts. Her primary interest is in a futures contract on a broad equity index that will expire 240 days from today. The closing price as of yesterday, January 17, for the equity index was 1,050. The expected dividends from the index yield 2% (continuously compounded annual rate). The effective annual risk-free rate is 4.0811%, and the term structure is flat. Norris decides that this equity index futures contract is the appropriate hedge for her client's portfolio and enters into the contract.

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Sixty days after entering into the futures contract, the equity index reached a level of 1,015. The futures contract that Norris purchased is now trading on the Chicago Mercantile Exchange for a price of 1,035. Interest rates have not changed. After performing some calculations, Norris calls her client to let him know of an arbitrage opportunity related to his futures position. Over the phone, Norris

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Which of the following best describes the movement of the futures price on the 240-day equity index futures contract as the contract moves toward the expiration date?

Options:

- A- The futures price will move toward zero as expiration nears.
- B- The futures price will move toward the expected spot price as expiration nears.
- C- The futures price will move toward the spot price as expiration nears.

Answer:

C

Explanation:

The futures price for a given contract maturity must converge to the spot price as the contract moves toward expiration. Otherwise, arbitrage opportunities would exist. (Study Session 16, LOS 59.a)

Question 7

Question Type: MultipleChoice

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Evaluate Norris's comments regarding the convenience yield on the equity index futures contract and the differences between a forward and a futures contract with the same terms.

Options:

- A-** Norris is only correct with respect to the convenience yield.
- B-** Norris is only correct with respect to the difference between forwards and futures.
- C-** Norris is incorrect with respect to both the convenience yield and the difference between forwards and futures.

Answer:

C

Explanation:

Norris is incorrect regarding the convenience yield. The price of an index futures contract is reduced by cash flows from the underlying asset, but the reduction comes from the future value of the cash flows, not from an implied cost for retaining the use of the underlying asset. The comment regarding the difference between the futures and forward contracts is also incorrect. In a flat (constant) interest rate environment (indicated in the first paragraph of the item set), there is no difference in the prices of futures or forward contracts. The part of the comment relating to credit risk is correct. Since the forward contracts are not marked to market each day, the value is not reset to zero each day and credit risk is higher since large losses are allowed to accumulate. Thus, the credit risk would increase if forwards were used instead of futures. (Study Session 16, LOS 59.c,d)

Question 8

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Which of the following types of futures markets best characterizes the observed market for the 240-day equity index futures contract?

Options:

A- Inverted.

B- Backwardation.

C- Contango.

Answer:

C

Explanation:

Contango markets are characterized by futures prices that are higher than the spot price. Since the futures price calculated in the previous question is higher than the spot price, the market can be characterized as a contango market. (Study Session 16, LOS 59.e)

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