Question #1 of 96

Connor Brooski, FRM is examining a Eurodollar contract for a futures contract that is maturing in six months. At that time, the 90-day forward LIBOR six months from now is relatively low, around 1.75%. Brooski has been following the daily marking to market of the futures contract and has noted differences between actual forward rates, and those rates implied by the futures contracts. What effect does the use of the convexity adjustment have on this difference?

✗ **A) The difference is increased by using the convexity adjustment.**

✓ **B)** The difference is reduced by using the convexity adjustment.

✗ **C)** The convexity adjustment will eliminate the difference.

✗ **D)** There is no difference in the adjustment to the rates as a result of the convexity adjustment.

Explanation

Generally long-dated Eurodollar futures contracts result in implied forward rates which tend to be larger than actual forward rates.

Question #2 of 96

The minimum variance hedge ratio is equal to the product of the correlation coefficient between the spot and futures price changes and the ratio of the:

✓ **A) standard deviation of the spot to the standard deviation of the futures.**

✗ **B)** variance of the futures to the variance of the spot.

✗ **C)** variance of the spot to the variance of the futures.

✗ **D)** standard deviation of the futures to the standard deviation of the spot.

Explanation

The minimum variance hedge ratio is defined as the product of the correlation coefficient times the ratio of the standard deviation of the spot price change and the standard deviation of the future price change.

Question #3 of 96

Which of the following increases the cost of rolling a long hedge (i.e., using long futures contracts to hedge a pre-existing short position)?
I. Futures prices rising above the spot price.
II. Futures prices falling below the spot price.

✗ **A) Neither I nor II.**

✗ **B)** II only.

✗ **C)** Both I and II.

✓ **D)** I only.

Explanation

Normal backwardation exists when futures prices are generally less than spot prices, with the difference being larger for longer-term contracts. Contango exists when futures prices are greater than spot prices. As a market shifts from normal backwardation to contango, futures prices rise above the spot price, and rolling a long hedge involves selling relatively cheap short-term contracts and buying relatively expensive long-term contracts, thereby increasing the cost of rolling the hedge.

Question #4 of 96

Two analysts are discussing the proper use of swaps, and work with clients to design all types of swaps. Which of the following types of swaps allow swap payments to be floating on both sides, with payments not known until the end of each period?

✓ **A) Equity swap.**

✗ B) Volatility swap.

✗ C) Interest rate swap.

✗ D) Commodity swap.

Explanation

Equity swap payments are a bit unique, since they allow payments to be floating on both sides, with payments not known until quarter-end.

Question #5 of 96

John Jordan manages a bond portfolio valued at $11.2 million, which has a duration of five years. To hedge against an increase in interest rates, he wishes to employ interest-rate futures. The deliverable on the current futures contract has a duration of seven years, and the futures contract is trading at 97.5 with a contract size of $100,000. To hedge the position, Jordan must:

✗ **A) buy 54 contracts.**

✗ B) sell 54 contracts.

✓ C) sell 82 contracts.

✗ D) buy 82 contracts.

Explanation

$$N = -\frac{P \times D_P}{F_C \times D_F} = -\frac{11,200,000 \times 5}{97,500 \times 7} \approx -82$$

Question #6 of 96

A 12-year, 8 percent semiannual coupon bond with $100 par value currently trades at $78.75 and has an effective duration of 9.8 years and a convexity of 130.0. What is the price of the bond if the yield falls by 150 basis points?

✗ **A) $95.43.**

✗ B) $86.47.

✗ C) $67.17.

✓ D) $91.48.

Explanation

Percentage price change = [(-) (effective duration)(Δy)]+[(1/2)(convexity)(Δy)²]

= [(-)(9.80)(-0.015)(100)]+[(0.5)(130)(-0.015)²(100)] = 16.16

Estimated price = 78.75(1+0.1616) = $91.48

Question #7 of 96

A semi-annual pay bond with a $100 par value pays coupons on March 1 and September 1. The annual coupon is 8%, and it is currently June 13. Compute the accured interest of this bond as a T-bond.

- ✗ **A)** $2.29.
- ✗ **B)** $4.58.
- ✗ **C)** $4.52.
- ✓ **D)** $2.26.

Explanation

Using the actual/actual convention there are 184 days between coupon payments and 104 days from March 1 and June 13.

Accured interest: 104/184 × $8/2 = $2.26.

Question #8 of 96

Company A and Company B enter into a 2 year plain vanilla interest rate swap. Company A agrees to pay Company B a periodic fixed rate on a notional principal over the swap's tenor. In exchange, Company B agrees to pay Company A a periodic floating rate on the same notional principal. Assume currency is the same.   The payments will be made semi-annually. The reference rate is the 6-month LIBOR. The fixed rate of the swap is 0.95%, and the notional principal is $100 million. 6-month LIBOR rates are as follows:

Beginning of Period	LIBOR
1	0.65%
2	0.85%
3	1.10%
4	1.45%
5	1.55%

What is the net payment due to Company B at the end of period 2?

- ✓ **A)** $50,000.
- ✗ **B)** $425,000.
- ✗ **C)** -$100,000.
- ✗ **D)** -$50,000.

Explanation

Floating = $100 million × 0.0085 × 0.5 = $425,000

Fixed = $100 million × 0.0095 × 0.5 = $475,000

In examining the relationship between forward and futures prices, which statement is the most accurate?

✓ **A)** **Assuming forward and futures prices are the same is an approximation.**

✗ **B)** The law of arbitrage guarantees that the payoffs between the two will not be identical.

✗ **C)** Forward and futures prices can be shown to be the same.

✗ **D)** Forward prices have a tendency to be more volatile.

Explanation

Forward and futures prices are the same only when interest rates are known over a contract's life. There are circumstances in which forward and futures prices will diverge.

Company J enters into a fixed-for-fixed currency swap with Company K. Company J is paying 3% in Euros to Company K, and receiving 2.5% in USD from Company K. What is the value of the swap in USD to Company J?

✓ **A)** **PV of the USD payments - (Spot rate in USD per Euro × PV of the Euro-denominated payments)**

✗ **B)** FV of the USD payments - FV of the Euro-denominated payments

✗ **C)** PV of the Euro-denominated payments - (Spot rate in USD per Euro × PV of the USD payments)

✗ **D)** Spot rate of the USD payments - (Spot rate in USD per Euro × PV of the Euro-denominated payments)

Explanation

PV of the USD payments - (Spot rate in USD per Euro × PV of the Euro-denominated payments)

What is the most common use of a commodity swap, and how does it typically work?

✓ **A)** **To manage the cost of purchasing energy resources; one firm agrees to pay a fixed rate for multi-period delivery and receive a corresponding floating rate based on spot rates at time of delivery.**

✗ **B)** To manage the cost of grain; one firm agrees to pay a floating rate for multi-period delivery and receive a corresponding fixed rate based on spot rates at time of delivery.

✗ **C)** Farmers managing crop production costs; one firm agrees to pay a fixed rate for multi-period delivery and receive a corresponding floating rate based on spot rates at time of delivery.

✗ **D)** To manage energy costs; one firm agrees to pay a fixed rate for multi-period delivery and receive a corresponding floating rate based on LIBOR at time of delivery.

Explanation

The most common use of commodity swap agreements is trying to control energy costs, specifically oil and electricity. They are typically set up so one firm pays a fixed rate for the multi-period delivery of the commodity, in exchange for fixed payments based

on spot rates at time of delivery.

Question #12 of 96

Question ID: 439130

When dealing with Treasury bond futures, locating the cheapest-to-deliver bond is a critical decision. When yields are fairly low (below 6%), as they are at present, which of the following types of bonds tend to be the cheapest-to-deliver?

✗ **A) Zero-coupon, long maturity.**

✗ **B)** High-coupon, long maturity.

✗ **C)** Low-coupon, long maturity.

✓ **D)** High-coupon, short maturity.

Explanation

The cheapest-to-deliver bond minimizes: Quoted bond price - (quoted futures price x conversion factor)

Question #13 of 96

Question ID: 439063

An airline company wants to protect itself from large jet fuel price increases and has decided to use the futures markets and establish a long position. What is the term for this strategy?

✓ **A) Anticipatory hedge.**

✗ **B)** Expectations hedge.

✗ **C)** Minimum variance hedge.

✗ **D)** Volatility hedge.

Explanation

The airline company has anticipated the future need for jet fuel and has hedged accordingly.

Question #14 of 96

Question ID: 439110

Lisa Traina, FRM, is short a series of copper futures contracts. At present, copper's carrying cost is greater than the convenience yield. What should Traina do?

✗ **A) Take the opposite position shortly before contract expiration.**

✗ **B)** Deliver when futures price and spot price converges.

✓ **C)** Deliver the contract early.

✗ **D)** Deliver the contract at expiration.

Explanation

Since the carrying cost is greater than convenience yield, it is advantageous for the short position to deliver the contract early.

Question #15 of 96

Question ID: 439100

Assume that the short-term interest rate in London is 4 percent and that the short-term interest rate in the US is 2 percent. If the current exchange rate between the euro and dollar is 1=US$1.2217, using the continuous time futures pricing model, what is the price of a three-month futures contract?

✗ **A)** **$1.2144.**

✗ **B)** $1.2207.

✗ **C)** $1.2235.

✓ **D)** $1.2156.

Explanation

The formula is: $1.2217e^{(0.02-0.04)(0.25)} = \$1.2156$.

Foreign currencies are similar to index futures when it comes to computing the futures price. Since exchange rates are driven by interest-rate differentials, the exchange rate can be treated as an asset that pays a continuous rate, r_f. More simply, interest-rate parity states that the forward exchange rate (measured in $/ unit of foreign currency), F, must be related to the spot exchange rate, S, and the interest-rate differential between the U.S. and the foreign country.

Question #16 of 96

Craig Fullen is a portfolio manager with a $25,000,000 value portfolio with a beta of 0.75 relative to the S&P 500. Fullen is concerned the market will fall, and wants to hedge the risk to his portfolio using S&P 500 futures contracts. If the current value of the S&P 500 is 1,050, what action should Fullen take to hedge his portfolio? Assume the contract multiplier for S&P 500 index futures is 250.

✗ **A)** **Sell 119 futures contracts.**

✗ **B)** Buy 95 futures contracts.

✓ **C)** Sell 71 futures contracts.

✗ **D)** Sell 95 futures contracts.

Explanation

Because Fullen is long the portfolio, he will want to short futures contracts. number of contracts = $\beta_{portfolio}$ × (portfolio value/value of futures contract). The value of the futures contract = 1,050 × 250 = $262,500. number of contracts = 0.75 × ($25,000,000 / $262,500) = 71 contracts.

Question #17 of 96

A bank has $100 million in assets with modified duration of 8.5, and $90 million of liabilities with modified duration of 6.5. Accounting only for duration effects, a 50 basis point parallel downward shift would impact the bank's equity position by an amount *closest* to a:

✓ **A)** **$1.325 million increase in equity.**

✗ **B)** $90 million increase in equity.

✗ **C)** $10 million increase in equity.

✗ **D)** $100 million decrease in equity.

Explanation

The change in assets would be an increase of ($100)(8.5)(0.005) = $4.25 million, whereas the change in liabilities would be an increase of ($90)(6.5)(0.005) = $2.925 million. The net effect would be an increase in equity of $1.325 million.

Question #18 of 96

If the issuer of a bond is in default, the bond will be trading:

  ✗ **A)** **off the market.**

  ✗ **B)** registered.

  ✓ **C)** flat.

  ✗ **D)** on accrual.

Explanation

If an issuer of a bond is in default (i.e., it has not been making periodic contractual coupon payments), the bond is traded without accrued interest and is said to trade *flat*.

A *registered bond* is a bond whose owner's name is recorded as a book entry on the books of the issuer or its transfer agent.

Question #19 of 96

An FRM candidate is studying commodity futures, specifically income and storage costs associated with consumption assets. Which statement is correct, concerning consumption assets and storage costs?

  ✓ **A)** **Consumption assets' actual storage costs may be expressed as either a known cash flow or as a yield.**

  ✗ **B)** The storage costs associated with consumption assets are offset by the income, in most cases.

  ✗ **C)** Consumption assets' actual storage costs must be expressed as a known cash flow.

  ✗ **D)** Consumption assets' actual storage costs must be expressed as a yield.

Explanation

Convenience yield measures the benefit of owning physical (spot) consumption commodities.

Question #20 of 96

A bank entered into a 4-year tenor plain vanilla swap exactly three years ago from today. The agreements of the swap are to pay 6.5 percent annually, based on annual compounding with a 30/360 day-count convention, fixed rate on a $50 million notional, and receive 1-year London Interbank Offered Rate (LIBOR). The continuously compounded LIBOR for 1-year obligations is currently 5.75 percent. The 1-year LIBOR at the beginning of the period was 6.25 percent. The value of the swap is *closest* to:

  ✗ **A)** $110,000.

  ✓ **B)** -$270,000.

  ✗ **C)** $800,522.

  ✗ **D)** -$257,020.

Explanation

The value of the fixed-rate component of the swap is ($50 × 1.065)e^{(-0.0575)} = $50.27M. The value of the floating-rate component of the swap is its par value of $50M since we are currently at an annual settlement date. Hence, the value of the swap to this counterparty is approximately $50M - $50.27M = -$270,000.

Question #21 of 96

Scott Malooly recently paid 109.05 for a $1,000 face value, semi-annual coupon bond with a quoted price of 105.19. Assuming that transaction costs are zero, which of the following statements is *most* accurate?

  ✗ **A)** **The price Malooly paid includes the discounted amount of accrued interest due to seller.**

  ✗ **B)** The bond was trading ex-coupon.

  ✓ **C)** Malooly purchased the bond between coupon dates.

  ✗ **D)** The price Malooly paid covers the amount of the next coupon payment not earned by the seller.

Explanation

When a bond trades between two consecutive coupon dates, the seller is entitled to receive interest earned from the previous coupon date until the date of the sale. The price paid includes accrued interest and is referred to as the "dirty price."

The other statements are false. The price Malooly paid includes the amount of the next coupon payment that he, the buyer, has not earned. When a security trades ex-coupon, the buyer pays the *clean price*, which is the *quoted price without* accrued interest. Accrued interest is not discounted when calculating the dirty price of a bond.

Question #22 of 96

Using the continuous time forward pricing model, what is the no-arbitrage price of a 9-month forward contract if the interest rate is 2.4 percent and the spot price of the asset is $1,650?

  ✗ **A)** **$1,664.**

  ✗ **B)** $1,689.

  ✓ **C)** $1,680.

  ✗ **D)** $1,621.

Explanation

The formula is: $1650e^{(0.024)(270/360)} = 1,679.97$, or $1,680.

Question #23 of 96

Burton Futura, FRM is short a well-known tech stock and wishes to engage in a futures transaction to protect against losses in his short position. What would be the best futures transaction for this situation, particularly if Futura expects the price of the tech stock to increase?

✗ **A) Offset hedge.**

✗ **B)** Straddle.

✓ **C)** Long hedge.

✗ **D)** Short hedge

Explanation

A long hedge is the purchase of a futures contract to protect against the price increase of a short position.

Question #24 of 96

A firm has entered into a $22.5 MM plain vanilla interest rate swap in which it pays fixed at 4.2 percent and receives LIBOR. At inception, what is the firm's credit exposure on this swap if LIBOR is 3.2 percent?

✓ **A) $0.**

✗ **B)** $225,000.

✗ **C)** $22.5 MM.

✗ **D)** $11.25 MM.

Explanation

The value of a plain vanilla swap at inception is zero as the swap fixed rate (SFR) is set to make the PV of both the fixed and expected floating rate payments equal.

Question #25 of 96

The day count convention used to calculate accrued interest on U.S. Treasury bonds is:

✓ **A) actual/actual.**

✗ **B)** 30/365.

✗ **C)** 30/360.

✗ **D)** actual/360.

Explanation

The day count convention for calcuating interest for T-bonds is actual/actual.

Question #26 of 96

A portfolio manager would like to use S&P 500 stock index futures to help increase his exposure to movements in the stock market over the next three months. The current S&P500 futures contracts are trading at 1,205 with a multiplier of $250, and the portfolio manager would like to increase the portfolio beta from 0.92 to 1.05. If the value of the asset portfolio is $15 million, the position taken for stock index futures would be *closest* to which of the following?

✗ **A) Sell 50 contracts.**

✗ **B)** Purchase 50 contracts.

✗ **C)** Sell 6 contracts.

✓ **D)** Purchase 6 contracts.

Explanation

The portfolio manager's target equity exposure sensitivity measure is 1.05, while its current measure is 0.92. The number of futures contracts can be determined as [(1.05-0.92) $15 million] / ($250 x 1205)] ≈ 6 contracts. The portfolio manager wants to buy six S&P 500 contracts to increase his exposure.

Question #27 of 96

The following Treasury zero rates are exhibited in the marketplace:

- 6 months = 1.25%

- 1 year = 2.35%

- 1.5 years = 2.58%

- 2 years = 2.95%

Assuming continuous compounding, the price of a 2-year Treasury bond that pays a 6 percent semiannual coupon is *closest* to:

✗ **A) 105.20.**

✓ **B)** 105.90.

✗ **C)** 108.66.

✗ **D)** 103.42.

Explanation

$3e^{(-0.0125 \times 0.5)} + 3e^{(-0.0235 \times 1)} + 3e^{(-0.0258 \times 1.5)} + 103e^{(-0.0295 \times 2)} = 105.90$

Question #28 of 96

A forward rate agreement (FRA):

✗ **A) is risk-free when based on the Treasury bill rate.**

✗ **B)** is settled by making a loan at the contract rate.

✗ **C)** is priced in dollars.

✓ **D)** can be used to hedge the interest rate exposure of a floating-rate loan.

Explanation

An FRA settles in cash and carries both default risk and interest rate risk, even when based on an essentially risk-free rate. It can be used to hedge the risk/uncertainty about a future payment on a floating rate loan.

Question #29 of 96

At the inception of a six-month forward contract on a stock index, the value of the index was $1,150, the interest rate was 4.4 percent, and the continuous dividend was 1.8 percent. Three months later, the value of the index is $1,075. Which of the

following statements is **TRUE**? The value of the:

✗ **A)** **short position is $47.56.**

✗ **B)** long position is $47.56.

✗ **C)** long position is $82.41.

✓ **D)** long position is -$82.41.

Explanation

At the inception of the forward contract, the delivery price would have been:
$1,150e^{(0.044-0.018)(0.5)} = \$1,165.05$.

The value to the long position after three months is: $1,075e^{(-0.018)(0.25)} - 1,165.05e^{(-.044)(.25)} = 1,070.17 - 1,152.31 = -\$82.41$. Therefore, the value of the short position is $82.41.

Question #30 of 96

Marty Moore, FRM is an investor with a short position and is preparing to deliver a bond. From his bond portfolio, he has four positions to choose from. The last settlement price, also the quoted futures price, is $97.85. Which bond would be the "worst choice" for Parks to deliver?

Bond	Quoted Bond Price	Conversion Factor
A	101	1.03
B	116	1.12
C	105	1.07
D	124	1.23

✗ **A)** **Bond D.**

✓ **B)** Bond B.

✗ **C)** Bond C.

✗ **D)** Bond A.

Explanation

Cost of delivery:

Bond A: 101 - (97.85 x 1.03) = $0.21

Bond B: 116 - (97.85 x 1.12) = $6.41

Bond C: 105 - (97.85 x 1.07) = $0.30

Bond D: 124 - (97.85 x 1.23) = $3.64

Bond A is the cheapest to deliver, at $0.21. Bond B is the most expensive to deliver, at $6.41.

Question #31 of 96

A Treasury bill, with 45 days until maturity, has an effective annual yield of 12.50%. The bill's holding period yield is *closest* to:

✗ **A)** 12.50%.

✓ **B)** 1.46%.

✗ **C)** 1.54%.

✗ **D)** 1.57%.

Explanation

The effective annual yield (EAY) is equal to the annualized holding period yield (HPY) based on a 365-day year. EAY = (1 + HPY)$^{365/t}$ − 1. HPY = (EAY + 1)$^{t/365}$ − 1 = (1.125)$^{45/365}$ − 1 = 1.46%.

Question #32 of 96

Question ID: 439073

Jimmy Deininger, FRM is a portfolio manager and runs a large $400,000,000 value portfolio. Relative to the S&P 500, Deininger's portfolio has a beta of 1.07. Currently, S&P futures are trading at 1,368, and the multiplier is 250. Deininger has created a hedge for his portfolio value for the next four months.

If Deininger wishes to correct for any possible over-hedging through a "tailing the hedge" strategy, how would he implement this strategy? Assume the futures price is now 1,380 and the spot price is 1,325. After making a "tailing the hedge" adjustment, how many S&P futures contracts are needed?

✓ **A)** Multiply the hedge ratio by the daily spot price to futures price ratio; 1,201 contracts.

✗ **B)** Multiply the hedge ratio by the futures price to daily spot price ratio; 1,012 contracts.

✗ **C)** Multiply the hedge ratio by the futures price to daily spot price ratio; 1,385 contracts.

✗ **D)** Multiply the hedge ratio by the daily spot price to futures price ratio; 986 contracts.

Explanation

1.07 × ((400,000,000 / (1,368 × 250)) × (1,325 / 1,380) = 1,201 contracts

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Question #33 of 96

Question ID: 439072

The purpose of computing a minimum variance hedge ratio is to minimize the variance of the:

✗ **A)** correlation estimator.

✓ **B)** combined hedged and hedging instrument portfolio.

✗ **C)** hedging instrument.

✗ **D)** instrument to be hedged.

Explanation

The purpose of computing a minimum variance hedge ratio is to minimize the variance of the combined portfolio.

Question #34 of 96

Question ID: 439113

A quantitative analyst is studying the relationship between commodity futures prices and current spot prices. How would a situation referred to as "contango" best be described?

✓ **A) Futures price is greater than the spot price.**

✗ **B)** Spot price is greater than the futures price.

✗ **C)** There is a benefit to holding the asset.

✗ **D)** Spot price is greater than the futures price, and the futures contract exhibits positive systematic risk

Explanation

Contango occurs when the futures price is higher than the spot price, thus there is no benefit to holding the asset.

Question #35 of 96

A 5% coupon bond with semi-annual coupon payments on a coupon payment date when the coupon has not been paid yet and the bond has a $1,000 par value. What is the accrued interest of the bond and what is the bond's full price?

	Accrued Interest	Full Price
✗ **A)**	**$50**	**$1,000**
✗ **B)**	$50	$1,050
✓ **C)**	$25	$1,025
✗ **D)**	$25	$1,000

Explanation

Accrued interest is found by simply dividing the coupon rate by two and then multiplying the result by $1,000. The full price or dirty price of the bond is the price of the bond plus accrued interest, if any.

Question #36 of 96

Understanding that duration is a good approximation for changes in price for a standard, option-free bond, what benefit does determining the amount of convexity add?

✓ **A) Convexity accounts for the amount of error in the estimated price change based on duration.**

✗ **B)** Convexity estimates the basis point change in yield as time passes until the bond's maturity using a continuous compounding method.

✗ **C)** Convexity measures the standard error of estimate.

✗ **D)** Convexity measures the difference between actual and estimated prices and how that difference narrows as yield swings grow.

Explanation

Convexity essentially picks up where duration leaves off. The relationship between bond price and yield is not really linear, and convexity converts the straight line into a curved line, which more closely resembles the actual price relationship.

Which of the following is an important effect of dividends on the cost-of-carry model? Dividends:

✓ **A)** **reduce the cost of carry.**

✗ **B)** eliminate arbitrage opportunities.

✗ **C)** do not affect the cost-of-carry model.

✗ **D)** reduce the value of the spot prices.

Explanation

The cost of carry must be reduced by the dividends that are expected to be received while holding the underlying stock.

Question #38 of 96

A weakening of the basis is a consequence of the:

✗ **A)** **spot price increasing faster than the futures price over time.**

✓ **B)** futures price increasing faster than the spot price over time.

✗ **C)** spot price moving according to hyper-arithmetic Brownian motion.

✗ **D)** futures price moving according to hyper-arithmetic Brownian motion.

Explanation

Basis is defined as the difference between the spot price and the futures price. Weakening of the basis occurs when the futures price increases relatively faster than the spot price

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Question #39 of 96

If a short seller is faced with a "short squeeze", what transpires?

✗ **A)** **The deposit the short seller has with the broker is wiped out.**

✗ **B)** The underlying stock drops dramatically.

✓ **C)** Short seller may have to close his position.

✗ **D)** Counterparty must pay the dividends.

Explanation

A "short squeeze" is when the broker runs out of securities to borrow, forcing the short seller to immediately close out his position.

Question #40 of 96

An investor has entered into a forward rate agreement (FRA) where she has contracted to pay a fixed rate of 5 percent on $5,000,000 based on the quarterly rate in three months. If interest rates are compounded quarterly, and the floating rate is 2 percent in three months, what is the payoff at the end of the sixth month? The investor will:

✗ **A)** **receive a payment of $37,500.**

✗ **B)** make a payment of $75,000.

✗ **C)** receive a payment of $75,000.

✓ **D)** make a payment of $37,500.

Explanation

Payoff = $5,000,000 (0.02 - 0.05)(0.25) = -37,500. The negative sign means the investor will make a payment of $37,500.

Question #41 of 96

The S&P 500 index is trading at 1015. The S&P 500 pays an expected dividend yield of 2 percent and the current risk-free rate is 4.1 percent. The value of a 3-month futures contract on the S&P 500 is *closest* to:

✗ **A)** 979.86.

✗ **B)** 997.68.

✗ **C)** 1,350.59.

✓ **D)** 1,020.34.

Explanation

$1015e^{(0.041 - 0.02)(0.25)} = 1020.34$

Question #42 of 96

Which of the following would be considered a key difference between a forward contract and a futures contract?

✓ **A)** **Futures contract is marked to market regularly, while a forward contract is not.**

✗ **B)** Only forward contracts can be set up as cash settlement contracts.

✗ **C)** The owner of the forward contract receives cash flows from the underlying asset between contract origination and delivery.

✗ **D)** One clearinghouse is the counterparty to all forward contracts.

Explanation

The reverse is true: a futures contract is marked to market, generally daily.

Question #43 of 96

A financial institution has entered into a plain vanilla currency swap with one of its customers. The period left on the swap is 3 years, with the institution paying 5 percent on USD20 million and receiving 2.5 percent on JPY1,500 million annually. The current exchange rate is JPY120/USD, and the flat term structure in both countries generates a 3 percent rate in the U.S. and a 0.75 percent rate in Japan. The current value of this swap to the institution is closest to:

✓ A) -USD7.95 million.

✗ B) USD6.875 million.

✗ C) -USD6.875 million.

✗ D) USD7.95 million.

Explanation

The institution is paying USD and receiving JPY, so the value of this swap will equal the current exchange rate times the value of the JPY portion minus the value of the USD portion. The JPY portion of this swap is:

$$= 37.5e^{(-0.0075)} + 37.5e^{(-0.0075 \times 2)} + 1{,}537.5e^{(-0.0075 \times 3)} = \text{JPY1,577.45 million}$$

The USD portion of the swap $= 1e^{(-0.03)} + 1e^{(-0.03 \times 2)} + 21e^{(-0.03 \times 3)} = \text{USD21.10 million}$

The value to the institution $= \left[\dfrac{\text{JPY1,577.45}}{\text{JPY120 / USD}} \right] - \text{USD21.10} = -\text{USD7.95 million}$

Question #44 of 96

Which of the following factors is (are) often considered to be a problem with hedged positions?

  I. Uncertainty with roll-over of the hedging instrument.

  II. Perfect correlation between the asset and the hedging instrument.

  III. Certainty with the date of the underlying asset's purchase or sale.

  IV. Imperfect correlation between the hedged asset and the hedging instrument.

✗ A) II and III only.

✓ B) I and IV only.

✗ C) I only.

✗ D) I and II only.

Explanation

Imperfect correlations between the futures price and the underlying spot price decrease the effectiveness of a hedged position. When the hedging horizon is long relative to the maturity of the futures used in the hedging strategy, the hedge has to be rolled prior to expiration. As maturity of the hedging instrument approaches, the hedger must close out the existing position and replace it with another contract with a later maturity. Rolling the hedge forward exposes the hedger to the basis risk of the new position each time the hedge is rolled.

Question #45 of 96

The per annum discount rate of a 180-day T-bill with a cash price of 98 is closest to:

✗ A) 2%.

✓ B) 4%.

✗ C) 1%.

✗ D) 3%.

Explanation

The discount rate, or quoted price, is calculated as: (360/n) × (100 - cash price). Given a 180-day T-bill and a cash price of 98, the annual discount rate is: (360/180) × (100 - 98) = 4%.

Question #46 of 96

Calculate the theoretical futures price for a Treasury bond futures contract given the following information:

Accrued interest: 0.7

Cash price of cheapest-to-deliver bond: 103.1

Cash futures price: 97.69

Quoted futures price: 96.99

Conversion factor: 1.15

✓ **A) 84.34.**

✗ **B)** 86.76.

✗ **C)** 90.12.

✗ **D)** 88.88.

Explanation

The formula to produce the theoretical price for this specific Treasury bond is Quoted Futures Price (QFP) divided by the conversion factor:

96.99 / 1.15 = 84.34

Question #47 of 96

The dirty, or full, price of a bond:

✗ **A) applies if an issuer has defaulted.**

✗ **B)** is paid when a security trades ex-coupon.

✓ **C)** equals the present value of all cash flows, plus accrued interest.

✗ **D)** is usually less than the clean price.

Explanation

The dirty price of a bond equals the quoted price plus accrued interest. *If an issuer has defaulted*, the bond trades without interest and is said to trade flat. When a *security trades ex-coupon*, the buyer pays the clean price, which is the quoted price without accrued interest. The dirty price of a bond is *greater than the clean price* by the amount of the accrued interest. (If the bond trades on a coupon date, the dirty price will equal the clean price.)

Question #48 of 96

Assume that a currency swap is established, and it must be valued using a sequence of forward rate agreements (FRAs) to Company J.

Further assume:

USD 1.57 = GBP 1

Forward Rates:

Year 1: $1.57 / £

Year 2: $1.52 / £

Year 3: $1.49 / £

Cash flows as follows:

Time	USD Cash Flow	GBP Cash Flow
1	10	6.36
2	10	6.36
3	10	6.36
3	250	159.23

What is the total of the net cash flows to Company J in year 3 only?

✓ **A) 13.27.**

✗ **B)** 13.19.

✗ **C)** 13.01.

✗ **D)** 13.45.

Explanation

Time	USD Cash Flow	GBP Cash Flow	Forward Rate	$ Value of £	Net Cash Flows
1	10	6.36	1.57	9.99	0.01
2	10	6.36	1.52	9.67	0.33
3	10	6.36	1.49	9.48	**0.52**
3	250	159.23	1.49	237.25	**12.75**

Question #49 of 96

Assume a bond's quoted price is 105.22 and the accrued interest is $3.54. The bond has a par value of $100. What is the bond's *clean* price?

✗ **A) $108.76.**

✗ **B)** $100.00.

✓ **C)** $105.22.

✗ **D)** $103.54.

Explanation

The clean price is the bond price without the accrued interest so it is equal to the quoted price.

Two banks enter into a 1-year plain vanilla interest-rate swap with the following terms:

- Notional principal is $500,000,000.

- The fixed component of the swap is 7%.

- The floating component of the swap is LIBOR + 200bps where LIBOR equals 5%.

If the current risk-free rate is 4 percent, the value for this swap at inception is *closest* to:

  ✗ **A)** $8,750,000.

  ✓ **B)** $0.

  ✗ **C)** $35,000,000.

  ✗ **D)** $500,000,000.

Explanation

The initial value of a swap is always zero. As interest rates move and payments take place, the value of the swap will change for both parties.

Calculate the forward rate for a coupon bond for these spot rates:

> One year rate: 2.92%
>
> Two year rate: 3.77%

  ✓ **A) 4.62%.**

  ✗ **B)** 4.64%.

  ✗ **C)** 4.66%.

  ✗ **D)** 4.68%.

Explanation

$R_{Forward}$ = 2-year rate + (2-year rate - 1-year rate) × 1/(2-1)

$R_{Forward}$ = 3.77 + (3.77 - 2.92) × 1/(2-1) = 4.62%

Which statement is most accurate regarding the mechanics of a currency swap?

  ✗ **A) Currency swaps are typically fixed-for-variable, and periodic cash flows are netted.**

  ✓ **B)** A currency swap exchanges principal and interest payments at the swap's inception using the spot exchange rate, and periodic cash flows are not netted.

  ✗ **C)** A currency swap exchanges principal and interest payments at the swap's inception using forward rates corresponding to the swap's tenor, and periodic payments are netted.

D) A currency swap exchanges interest payments with payments in different currencies and the periodic cash flows are not netted.

Explanation

In a currency swap, both principal and interest rate payments are exchanged, and periodic payments are not netted. The amounts exchanged are equal at the inception, and the spot exchange rate is used.

Question #53 of 96

The credit risks to the fixed-rate payer in a swap:

✗ **A)** **are greatest at the inception of the swap.**

✓ **B)** increase when floating rates rise above the swap rate.

✗ **C)** are greatest just prior to maturity.

✗ **D)** increase when floating rates are below the swap rate.

Explanation

When floating rates rise above the swap rate, the fixed rate side of the swap will have positive value, and the credit risk borne by the fixed-rate payer will increase. At the inception of the swap, the value to both sides is zero, and just prior to maturity, when only one net payment remains, credit risk is relatively small.

Question #54 of 96

A bond has an effective duration of 7.5 and a convexity of 104.0. If yields rise by 82 bps, the price of the bond will:

✓ **A)** **decrease by 5.80%.**

✗ **B)** increase by 6.15%.

✗ **C)** decrease by 6.15%.

✗ **D)** increase by 6.50%.

Explanation

%DPrice = [-7.5 ' 0.0082 ' 100] + [(1/2) ' 104 ' 0.0082^2 ' 100] = -5.80%.

Question #55 of 96

What is the proper discount rate to use when valuing an interest rate swap using a sequence of forward rate agreement, rather, at what rate are the swap cash flows discounted?

✗ **A)** **Corresponding forward rates implied by the forward rate agreements.**

✗ **B)** LIBOR forward rates.

✓ **C)** Corresponding spot rate from a LIBOR spot curve.

✗ **D)** Corresponding forward rates implied by Eurodollar futures.

Explanation

The LIBOR spot curve is produced through either the forward rates implied by the forward rate agreements or the convexity-adjusted Eurodollar futures.

Question #56 of 96

Assuming interest rates change markedly during the period of time of a plain vanilla interest rate swap, what effect will this have on the two parties involved?

- ✗ **A)** **The fixed rate payer has the advantage.**
- ✗ **B)** The receiver of the floating rate payment has the advantage in most cases.
- ✓ **C)** Interest rate risk exposure for the parties will completely change for each party.
- ✗ **D)** This swap limits the liability to both parties.

Explanation

One party can effectively transform a fixed rate liability to a floating-rate liability, and vice-versa.

Question #57 of 96

When is a duration-based hedging strategy least successful?

- ✗ **A)** **When there are minimal changes in yield.**
- ✓ **B)** When changes in interest rates are large and nonparallel.
- ✗ **C)** When interest rates are rising.
- ✗ **D)** When yield changes are nearly perfectly correlated.

Explanation

A duration-based hedging strategy works best if there are small changes in yield, and it further assumes that the relationship between price and yield is linear.

Question #58 of 96

If 1-year rates are 5 percent, 1-year rates one year from now are expected to be 5.75 percent, and 1-year rates two years from now are expected to be 6.25 percent, then the unbiased expectations theory of interest rates would indicate current 3-year rates should be *closest* to:

- ✗ **A)** **6.37%.**
- ✗ **B)** 5.29%.
- ✓ **C)** 5.67%.
- ✗ **D)** 8.75%.

Explanation

Current 3-year rates have to equal current 1-year rates compounded by 1-year forward rates. Thus $[1 + r(3)]^3 = (1.05)(1.0575)(1.0625)$, which generates a current 3-year rate of 5.67 percent.

An analyst has been asked to calculate the theoretical futures price for a Treasury bond futures contract without any convexity adjustment. It is a 3-month Eurodollar futures contract, $25 movement per "tick", or basis point. The contract is a $1 million contract. If the quoted price for the Eurodollar futures price is 97.1, what is the theoretical price?

✗ **A)** **991,900.**

✓ **B)** 992,750.

✗ **C)** 993,100.

✗ **D)** 992,750.

Explanation

Contract price = 10,000 [100 - (0.25)(100.0 - 97.1)] = 992,750

Calculate bond yield given the information below. Assume semi-annual coupon payments and a bond price of $103.07.

> PMT = 3
>
> N = 6
>
> FV = 100

✗ **A)** **5.39%.**

✗ **B)** 2.44%.

✓ **C)** 4.89%.

✗ **D)** 3.67%.

Explanation

To compute bond yield, use the following information and solve for "i".

Multiply the yield (for 1/2 year) by 2:

> PMT = 3
>
> N = 6
>
> PV = -103.07
>
> FV = 100
>
> Par yield = i = 2.4437 × 2 = 4.89%

What is the term for the standardized contract, or Master Agreement, which outlines details of a particular swap, and what trade organization created it?

✓ **A)** **Confirmation, International Swaps and Derivatives Association (ISDA).**

✗ **B)** Tenor agreement, Bond Market Association (BMA).

  ✗ **C)** Swap contract, Bond Market Association (BMA).

  ✗ **D)** Acceptance, International Swaps and Derivatives Association (ISDA).

Explanation

Confirmations are drafted by the ISDA, and must be signed by each party to the swap.

Question #62 of 96

Austin Traynor is considering buying a $1,000 face value, semi-annual coupon bond with a quoted price of 104.75 and accrued interest since the last coupon of $33.50. If Traynor pays the dirty price, how much will the seller receive at the settlement date?

  ✓ **A) $1,081.00.**

  ✗ **B)** $1,033.50.

  ✗ **C)** $1,047.50.

  ✗ **D)** $1,014.00.

Explanation

The dirty price is equal to the agreed upon, or quoted price, plus interest accrued from the last coupon date. Here, the quoted price is 1,000 × 104.75%, or 1,000 × 1.0475 = 1,047.50. Thus, the dirty price = 1,047.50 + 33.50 = 1,081.00.

Question #63 of 96

Which of the following is *closest* to the correct value for the basis associated with a spot position valued at $15 per unit and a futures contract with a value of $18 per unit?

  ✗ **A) $5.0.**

  ✗ **B)** $3.0.

  ✗ **C)** $2.0.

  ✓ **D)** -$3.0.

Explanation

basis = spot price of asset being hedged − futures price of contract used in hedge:

  $15.0 − $18.0 = −$3.0.

Question #64 of 96

Jon Crandell, FRM is a fixed income portfolio manager, and he wishes to create a T-bond futures hedge to alter his portfolio's duration. What should he do if he wishes to shorten the duration of his portfolio with minimal disruption to the underlying portfolio, and what will this action do to the portfolio's interest rate sensitivity?

  ✓ **A) Sell futures; decrease portfolio's interest rate sensitivity.**

  ✗ **B)** Buy futures; decrease portfolio's interest rate sensitivity.

  ✗ **C)** Sell futures; increase portfolio's interest rate sensitivity.

✗ **D)** Buy futures; increase portfolio's interest rate sensitivity.

Explanation

Conversely, the portfolio manager can increase the duration of the portfolio by buying T-bond futures, which will increase the portfolio's interest rate sensitivity.

Question #65 of 96

Actual ownership of a physical commodity may provide benefits not afforded to holders of the futures contracts. What are these benefits?

✗ **A) Arbitrage benefit.**

✓ **B)** Convenience yield.

✗ **C)** Cost of carry advantage.

✗ **D)** Physical advantage.

Explanation

The physical ownership benefits are termed the "convenience yield" provided by that specific physical commodity.

Question #66 of 96

A corn grower is concerned that the price he can get from the field in mid-September will be less than he has forecasted. To protect himself from price declines, the farmer has decided to hedge. The best available futures contract he can find is for August delivery. Which of the following is the appropriate direction of his position and the source of basis risk that may impact the farmer?

✗ **A) Long futures; rollover.**

✓ **B)** Short futures; rollover.

✗ **C)** Short futures; correlation.

✗ **D)** Long futures; correlation.

Explanation

The farmer needs to be short the futures contracts. The source of basis risk for this farmer arises from the fact that his contract and harvest dates do not perfectly match. As a result, he will be exposed to basis risk due to a necessary rollover in his position.

Question #67 of 96

An investor has a 90-day T-bill with a quoted price of two. The face value is 100. Compute the true interest rate.

✗ **A) 1.0523%.**

✗ **B)** 0.7995%.

✗ **C)** 0.5126%.

✓ **D)** 0.5025%.

If a T-bill is quoted at two, that means that the annualized interest rate is 2% of face value.

Interest rate computation: (100 × 0.02 × 90/360) = 0.50

True rate of interest computation: 0.50/(100 - 0.5) = 0.5025%

Question #68 of 96

Question ID: 439087

A bank has entered into a 3 x 6 forward rate agreement to receive a fixed rate of 3.35 percent on $12 million in six months. If the applicable rate in three months is 3.62 percent, the cash flow associated with this forward rate agreement for the bank would be *closest* to:

  ✗ **A)** **$16,200.**

  ✗ **B)** $32,400.

  ✗ **C)** -$32,400.

  ✓ **D)** -$8,100.

Explanation

Since the bank has entered into the forward rate agreement to receive payment, and interest rates have increased, it will have to pay on the contract. The amount it will have to pay is (0.0335 - 0.0362)($12 million)(0.25) = -$8,100.

Question #69 of 96

Question ID: 439079

The effective annual yield (EAY) of a loan with a quoted rate of 8%, compounded quarterly is equivalent to the EAY of a loan with a continuously compounded quoted rate of:

  ✗ **A)** **8.08%.**

  ✓ **B)** 7.92%.

  ✗ **C)** 8.16%.

  ✗ **D)** 8.24%.

Explanation

For the quarterly compounded loan, EAY = $(1 + (0.08 / 4))^4 - 1 = 0.824$. For the continuously compounded loan, we want to find the value of r that solves $1.0824 = e^{r(1)}$. $r = \ln(1.0824) = 0.0792$.

Question #70 of 96

Question ID: 439142

The success of the currency swap markets has been explained by which of the following?

  ✗ **A)** **Floating interest rate risk arguments.**

  ✓ **B)** Comparative advantage arguments.

  ✗ **C)** Efficient exchange rate pricing arguments.

  ✗ **D)** Reduced counterparty risk arguments.

Comparative advantage arguments have also been used to explain the success of currency swap markets.

Question #71 of 96

Estimated price changes using only duration tend to:

- ✗ **A) underestimate the decrease in price that occurs with an increase in yield for large changes in yield.**
- ✗ **B)** overestimate the increase in price that occurs with a decrease in yield for large changes in yield.
- ✓ **C)** underestimate the increase in price that occurs with a decrease in yield for large changes in yield.
- ✗ **D)** overestimate the increase in price that occurs with a decrease in yield for small changes in yield.

Explanation

For large changes in yield, duration underestimates the increase in price that occurs with a decrease in yield, and overestimates the decrease in price that occurs with an increase in yield. For small changes in yield, the estimated price change and actual price change are very close to the same.

Question #72 of 96

Larry Kardaras, FRM and Luke Robertson, FRM are discussing the proper role that currency swaps play in a firm's overall risk management program.

Kardaras states: "A currency swap can actually transform the currency backing any asset, or liability, into a different currency entirely."

Robertson states: "A currency swap can reduce a firm's borrowing costs and produce enhanced investment returns."

Are Kardaras and Robertson correct in their statements?

- ✓ **A) Both Kardaras and Robertson are correct.**
- ✗ **B)** Kardaras is correct, Robertson is not.
- ✗ **C)** Neither are correct.
- ✗ **D)** Robertson is correct, Kardaras is not.

Explanation

Both statements are true. In addition, currency swaps, when combined with existing positions, can totally alter the risk of an asset or a liability.

Question #73 of 96

Which of the following increases the cost of rolling a long hedge (i.e., using long futures contracts to hedge a pre-existing short position)?
I. A market shift from normal backwardation to contango.
II. A market shift from contango to normal backwardation.

✗ **A)** II only.

✓ **B)** I only.

✗ **C)** Neither I nor II.

✗ **D)** Both I and II.

<u>Explanation</u>

Normal backwardation exists when futures prices are generally less than spot prices, with the difference being larger for longer-term contracts. Contango exists when futures prices are greater than spot prices. As a market shifts from normal backwardation to contango, futures prices rise above the spot price, and rolling a long hedge involves selling relatively cheap short-term contracts and buying relatively expensive long-term contracts, thereby increasing the cost of rolling the hedge.

Question #74 of 96

Economist John Maynard Keynes found the widely used method of expressing the futures price as a function of the expected spot price $F_0 = (S_T)$ to be flawed because it did not provide justification for speculators to enter the market. To entice speculators to bear the risk of futures contracts, the futures contract must be less than the expected spot price at maturity. What is the name of the frequently used model, and what is the market force that causes the price of the futures contract to be less than the expected spot price at maturity?

✗ **A)** Cost of carry model; contango.

✗ **B)** No arbitrage model; backwardation.

✓ **C)** Expectations model; normal backwardation.

✗ **D)** Future expectations model; normal contango.

<u>Explanation</u>

The expectations model states that the current futures price and expected spot price at time T are equal. However, to entice speculators, there must be a profit to be earned above the risk-free rate, so the futures price must be higher than the expected spot price at maturity.

Question #75 of 96

Assume that two firms are considering entering into a currency swap, and that their respective borrowing rates (U.S. dollars and Swiss francs) are as shown below:

<u>Company</u>	<u>USD Borrowing Rate</u>	<u>CHF Borrowing Rate</u>
Apple	2%	4%
Orange	3%	4.5%

What is the net potential borrowing savings by entering into a swap for both companies, Apple and Orange?

✗ **A) 100 basis points.**

✗ **B)** 150 basis points.

✓ **C)** 50 basis points.

✗ **D)** 0 basis points.

Explanation

In the U.S. market, the differential is 1%, while the corresponding differential in the Swiss market is 0.5%. The net potential borrowing savings is the "difference between the differences", or 50 basis points.

Question #76 of 96

Suppose a bond's quoted price is 105 7/32 and the accrued interest is $23.54. If the bond has a par value of $1,000, what is the bond's flat price?

✗ **A) $1,075.73.**

✗ **B)** $1,023.54.

✓ **C)** $1,052.19.

✗ **D)** $1,000.00.

Explanation

The flat price is the bond price without the accrued interest, so it is equal to the quoted price of 105 7/32 = $1,052.19.

Question #77 of 96

Brody Oakley, FRM, is valuing an interest rate swap based on a sequence of forward rate agreements (FRAs). Oakley is looking at a $12 million notional swap which pays a floating rate based on the 6-month LIBOR and receives a 4% fixed rate semiannually. 9 months remain on the swap. Pay dates are at 3 and 9 months. The spot LIBOR rates are 3 months at 3.6% and 9 months at 3.75%. LIBOR at the last payment date was 3.3%. In calculating the value of the swap to the fixed-rate receiver using the FRA methodology, Oakley must first determine the first floating rate cash flow. What is that cash flow?

✗ **A) $432,000.**

✗ **B)** $216,000.

✗ **C)** $396,000.

✓ **D)** $198,000.

Explanation

To compute the first floating rate cash flow, the last payment date's LIBOR rate of 3.3% is needed, then the floating rate cash flow in 3 months is:

12,000,000 × 0.033 / 2 = $198,000

Question #78 of 96

Which of the following is **TRUE** concerning basis risk? In a hedge using futures contracts:

✗ **A) basis risk is eliminated but price risk still exists.**

✗ **B)** both basis risk and price risk are eliminated.

✗ **C)** basis risk of the hedged security is replaced with price risk.

✓ **D)** price risk of the hedged security is replaced with basis risk.

Question #79 of 96

A primary criticism with the comparative advantage argument as justification for the existence of swaps is related to which of the following?

✗ **A) Perceived advantage in one market over the other.**

✓ **B)** Credit risk.

✗ **C)** Inefficient credit markets.

✗ **D)** Constant spreads over London Interbank Offered Rate (LIBOR).

Explanation

Credit risk is the main criticism of the comparative advantage argument, which fails to take into account the fact that a swap participant faces credit risk.

Question #80 of 96

Which of the following is a definition of basis risk? Basis risk is the uncertainty about the difference between the:

✗ **A) current spot price and the expected spot price over the hedging horizon.**

✓ **B)** spot and futures price over the hedging horizon.

✗ **C)** current spot price and the spot price at the time the hedge is removed.

✗ **D)** current spot price and the current futures price.

Explanation

The change in basis over the hedge horizon is termed basis risk.

Question #81 of 96

How will the value of a portfolio of non-callable corporate bonds hedged with Treasury futures change if the yield curve shifts up in a parallel manner by an anticipated amount? The value of the newly hedged portfolio:

✗ **A) increases.**

✗ **B)** decreases.

✓ **C)** stays the same.

✗ **D)** may increase or decrease.

Explanation

The portfolio is hedged against parallel movements in the yield curve so its value will not change.

Question #82 of 96

Which statement would be considered the most accurate regarding the swaps marketplace and the role of a financial intermediary?

- ✗ **A) While swaps have become more standardized, there is still credit risk involved, and the financial intermediary helps mitigate credit risk.**
- ✗ **B)** The swaps market is regulated, and banks typically serve as financial intermediaries.
- ✓ **C)** Swaps are not traded in any organized secondary market, and financial intermediaries earn a spread by bring two nonfinancial firms together in a swap agreement.
- ✗ **D)** Swaps are custom instruments, and swap participants are largely individuals.

Explanation

Swaps are largely customized, dominated by institutions, and financial intermediaries, typically banks, earn a spread of 3-4 basis points for putting two parties together in a swap agreement.

Question #83 of 96

In the context of bonds, accrued interest:

- ✗ **A) covers the part of the next coupon payment not earned by seller.**
- ✗ **B)** is discounted along with other cash flows to arrive at the dirty, or full price.
- ✓ **C)** equals interest earned from the previous coupon to the sale date.
- ✗ **D)** applies only to bonds with semi-annual or quarterly coupon payments.

Explanation

This is a correct definition of accrued interest on bonds. The other choices are false. Accrued interest can occur on all bonds with periodic coupon payments, not just bonds with payment frequencies greater than one year. Accrued interest *is not discounted* when calculating the price of the bond. The statement, "covers the part of the next coupon payment not earned by seller," should read, "...not earned by *buyer*."

Question #84 of 96

Using the continuous time forward pricing model, what is the no-arbitrage price of a 3-month forward contract if the interest rate is 3.2 percent and the spot price of the asset is $750?

- ✗ **A) $729.**
- ✗ **B)** $780.
- ✗ **C)** $744.
- ✓ **D)** $756.

Explanation

The formula is: $F_0 = S_0 e^{rT}$. Using this formula we calculate the forward price as $750e^{(0.032)(0.25)} = \$756$.

Question #85 of 96

Peter Stone is considering buying a $100 face value, semi-annual coupon bond with a quoted price of 105.19. His colleague points out that the bond is trading ex-coupon. Which of the following choices *best represents* what Stone will pay for the bond?

  ✗ **A)** $105.19 plus accrued interest.

  ✗ **B)** $105.19 minus accrued interest.

  ✗ **C)** $105.19 minus the coupon payment.

  ✓ **D)** $105.19.

Explanation

Since the bond is trading ex-coupon, the buyer will pay the seller the clean price, or the price without accrued interest. So, Stone will pay the quoted price. The choice $105.19 plus accrued interest represents the dirty price (also known as full price). This bond would be said to trade cum-coupon.

Question #86 of 96

Which of the following statements regarding accrued interest is *most* accurate?

  ✓ **A) The bond is trading flat if the bond issuer is in default and the bond is trading without accrued interest.**

  ✗ **B)** If the buyer must pay the seller the accrued interest, the bond is said to be trading ex-coupon.

  ✗ **C)** If the seller must pay the buyer accrued interest, the bond is said to be trading cum-par.

  ✗ **D)** The accrued interest is paid by the seller of the bond to the buyer (new owner) of the bond.

Explanation

The accrued interest is paid by the *new owner* of the bond to the seller of the bond. If the *buyer* must pay the *seller* accrued interest, the bond is said to be trading cum-coupon. Otherwise, it is trading ex-coupon.

Question #87 of 96

At the inception of a one-year forward contract on a stock index, the price of the index was 1,100, the interest rate was 2.6 percent, and the continuous dividend was 1.2 percent. Six months later, the price of the index is 1,125. Which of the following statements is **TRUE**? The value of the:

  ✗ **A) long position is -$17.17.**

  ✓ **B)** short position is -$17.17.

  ✗ **C)** short position is -$22.19.

  ✗ **D)** long position is $25.00.

Explanation

At the inception of the forward contract, the delivery price would have been:

$1,100e^{(0.026 - 0.012)} = 1,115.51$.

The value to the long position after six months is: $[1,125e^{(-0.012)(0.5)}] - [1,115.51e^{(-0.026)(0.5)}] = 1,118.27 - 1,101.10 = \$17.17$. Therefore, the value of the short position is -$17.17.

Question #88 of 96

Jan Echtenkamp, FRM is studying the interest rate parity relationship between the U.S. dollar and the Swiss franc. On what does the interest rate parity relationship depend?

✗ **A) An arbitrage opportunity between the currencies.**

✓ **B)** Spot and forward exchange rates between the two currencies.

✗ **C)** The forward contract taking on a non-zero value after contract is entered into.

✗ **D)** Future convergence of exchange rates between the two currencies.

Explanation

Interest rate parity must hold between the spot interest rates of the U.S. dollar and the Swiss franc if there are to be no arbitrage opportunities.

Question #89 of 96

Because there are a large number of available Treasury bonds (T-bonds) available for delivery on the futures market, which of the following defines the price received by the short position of the futures contract?

✓ **A) Conversion factor.**

✗ **B)** Chicago Board of Trade (CBOT) factor.

✗ **C)** Market yield option.

✗ **D)** Wild card option.

Explanation

Since the deliverable underlying T-bonds have very different market values, the CBOT has created *conversion factors*. The conversion factor defines the price received by the short position of the contract.

Question #90 of 96

Gold would be an example of what type of asset?

✗ **A) Depreciating.**

✓ **B)** Investment.

✗ **C)** Consumption.

✗ **D)** Intangible.

Explanation

Investment assets are assets held for the purpose of investment. Gold, silver, stocks and bonds are all investment assets.

Questions #91-93 of 96

Use a stated rate of 9% compounded periodically to answer the following three questions. Select the choice that is the closest to the correct answer.

Question #91 of 96

The semi-annual effective rate is:

✗ **A)** **10.25%.**

✓ **B)** 9.20%.

✗ **C)** 9.00%.

✗ **D)** 9.31%.

Explanation

First, we need to calculate the periodic rate, or 0.09 / 2 = 0.045.

Then, the effective semi-annual rate = $(1 + 0.045)^2 − 1 = 0.09203$, or 9.20%.

Question #92 of 96

The quarterly effective rate is:

✓ **A)** **9.31%.**

✗ **B)** 9.40%.

✗ **C)** 9.20%.

✗ **D)** 9.00%.

Explanation

First, we need to calculate the periodic rate, or 0.09 / 4 = 0.0225.

Then, the effective annual rate = $(1 + 0.0225)^4 − 1 = 0.09308$, or 9.31%.

Question #93 of 96

The continuously compounded rate is:

✗ **A)** **9.67%.**

✗ **B)** 9.20%.

✗ **C)** 9.45%.

✓ **D)** 9.42%.

Explanation

The continuously compounded rate = $e^r − 1 = e^{0.09} − 1 = 0.09417$, or 9.42%.

Calculator Keystrokes for e^t: Using the TI BA, enter [0.09] [2nd] [e^x] (this is the key with LN on the face of the button). On the HP, enter [0.09] [g] [e^x] (this key is located in blue on the key with 1/x in white print).

In reviewing historical interest rate trends and patterns, what rate do traders typically use as a proxy for the short-term risk-free rate?

✗ **A) Treasury rates, such as T-bill or T-bond.**

✓ **B)** LIBOR.

✗ **C)** U.S. interbank offered rate.

✗ **D)** Repo rate.

Explanation

Traders consider Treasury rates too low, and use LIBOR since it better reflects their opportunity cost of capital.

Question #95 of 96   Question ID: 439090

A 12-year, 6 percent, option-free bond is currently trading at par. The bond has a duration of 8.38 years and a convexity of 91.93. Your estimate of the percent price change (PPC) associated with a 100 basis point decrease in yield is *closest* to:

✗ **A) 8.84 percent decrease.**

✗ **B)** 7.92 percent decrease.

✓ **C)** 8.84 percent increase.

✗ **D)** 7.92 percent increase.

Explanation

$\Delta V_.\% \approx [\text{-duration}\times(\Delta y)\times100]+[0.5\times\text{convexity}\times(\Delta y)^2\times100]=[\text{-}8.38\times(\text{-}0.01)\times(100)]+[0.5\times(91.93)\times(\text{-}0.01)^2\times100]=8.84$.

Question #96 of 96   Question ID: 439066

A portfolio manager has a $15 million mid-cap portfolio that has a beta of 1.3 relative to the S&P 400. S&P 500 futures are trading at 1,150 and have a multiplier of 250. The most significant risk this manager faces in attempting to hedge his position is:

✗ **A) improper profit forecasts of the underlying position.**

✓ **B)** basis risk resulting from a cross-hedge.

✗ **C)** correlation risk resulting from a rollover of positions between the S&P 400 and S&P 500.

✗ **D)** volatility risk arising from unstable correlation predictions.

Explanation

Because the manager is considering hedging his S&P 400 exposure with S&P 500 contracts, his primary concern should be basis risk between the two.