Derivatives and Currency Management

CFA三级原版书课后题

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Reading 15

Option Strategies

Case: Aline Nuñes

- Aline Nuñes, a junior analyst, works in the derivatives research division of an international securities firm. Nuñes's supervisor, Cátia Pereira, asks her to conduct an analysis of various option trading strategies relating to shares of three companies: IZD, QWY, and XDF. On 1 February, Nuñes gathers selected option premium data on the companies, presented in Exhibit 1.

Case: Aline Nuñes

Exhibit 1 Share Price and Option Premiums as of 1 February (share prices and option premiums in €)				
Company	**Share Price**	**Call Premium**	**Option Date/Strike**	**Put Premium**
IZD	93.93	9.45	April/87.50	1.67
		2.67	April/95.00	4.49
		1.68	April/97.50	5.78
QWY	28.49	4.77	April/24.00	0.35
		3.96	April/25.00	0.50
		0.32	April/31.00	3.00
XDF	74.98	0.23	February/80.00	5.52
		2.54	April/75.00	3.22
		2.47	December/80.00	9.73

Case: Aline Nuñes

- Nuñes considers the following option strategies relating to IZD:

  Strategy 1: Constructing a synthetic long put position in IZD

  Strategy 2: Buying 100 shares of IZD and writing the April €95.00 strike call option on IZD

  Strategy 3: Implementing a covered call position in IZD using the April €97.50 strike option

Case: Aline Nuñes

- Nuñes next reviews the following option strategies relating to QWY:

  Strategy 4: Implementing a protective put position in QWY using the April €25.00 strike option

  Strategy 5: Buying 100 shares of QWY, buying the April €24.00 strike put option, and writing the April €31.00 strike call option

  Strategy 6: Implementing a bear spread in QWY using the April €25.00 and April €31.00 strike options

Case: Aline Nuñes

- Finally, Nuñes considers two option strategies relating to XDF:

  Strategy 7: Writing both the April €75.00 strike call option and the April €75.00 strike put option on XDF

  Strategy 8: Writing the February €80.00 strike call option and buying the December €80.00 strike call option on XDF

Case: Aline Nuñes

- Strategy 1 would require Nuñes to buy:
  - A. shares of IZD.
  - B. a put option on IZD.
  - C. a call option on IZD.

Case: Aline Nuñes

- **Solution: C.**

  To construct a synthetic long put position, Nuñes would buy a call option on IZD. Of course, she would also need to sell (short) IZD shares to complete the synthetic long put position.

Case: Aline Nuñes

- Based on Exhibit 1, Nuñes should expect Strategy 2 to be least profitable if the share price of IZD at option expiration is:
  A. less than €91.26.
  B. between €91.26 and €95.00.
  C. more than €95.00.

Case: Aline Nuñes

- **Solution: A.**

  Strategy 2 is a covered call, which is a combination of a long position in shares and a short call option. The breakeven point of Strategy 2 is €91.26, which represents the price per share of €93.93 minus the call premium received of €2.67 per share ($S_0 - c_0$). So, at any share price less than €91.26 at option expiration, Strategy 2 incurs a loss. If the share price of IZD at option expiration is greater than €91.26, Strategy 2 generates a gain.

Case: Aline Nuñes

- Based on Exhibit 1, the breakeven share price of Strategy 3 is closest to:
  A. €92.25.
  B. €95.61.
  C. €95.82.

Case: Aline Nuñes

- **Solution: A.**

  Strategy 3 is a covered call strategy, which is a combination of a long position in shares and a short call option. The breakeven share price for a covered call is the share price minus the call premium received, or $S_0 - c_0$. The current share price of IZD is €93.93, and the IZD April €97.50 call premium is €1.68. Thus, the breakeven underlying share price for Strategy 3 is $S_0 - c_0$ = €93.93 – €1.68 = €92.25.

Case: Aline Nuñes

- Based on Exhibit 1, the maximum loss per share that would be incurred by implementing Strategy 4 is:

  A. €2.99.

  B. €3.99.

  C. unlimited.

Case: Aline Nuñes

- **Solution: B.**

  Strategy 4 is a protective put position, which is a combination of a long position in shares and a long put option. By purchasing the €25.00 strike put option, Nuñes would be protected from losses at QWY share prices of €25.00 or lower. Thus, the maximum loss per share from Strategy 4 would be the loss of share value from €28.49 to €25.00 (or €3.49) plus the put premium paid for the put option of €0.50: $S_0 - X + p_0$ = €28.49 – €25.00 + €0.50 = €3.99.

Case: Aline Nuñes

➢ Strategy 5 is best described as a:

A. collar.

B. straddle.

C. bear spread.

Case: Aline Nuñes

➢ **Solution: A.**

Strategy 5 describes a collar, which is a combination of a long position in shares, a long put option with an exercise price below the current stock price, and a short call option with an exercise price above the current stock price.

Case: Aline Nuñes

➢ Based on Exhibit 1, Strategy 5 offers:

A. unlimited upside.

B. a maximum profit of €2.48 per share.

C. protection against losses if QWY's share price falls below €28.14.

Case: Aline Nuñes

- **Solution: B.**

  Strategy 5 describes a collar, which is a combination of a long position in shares, a long put option, and a short call option. Strategy 5 would require Nuñes to buy 100 QWY shares at the current market price of €28.49 per share. In addition, she would purchase a QWY April €24.00 strike put option contract for €0.35 per share and collect €0.32 per share from writing a QWY April €31.00 strike call option. The collar offers protection against losses on the shares below the put strike price of €24.00 per share, but it also limits upside to the call strike price of €31.00 per share. Thus, the maximum gain on the trade, which occurs at prices of €31.00 per share or higher, is calculated as $(X_2 - S_0) - p_0 + c_0$, or (€31.00 – €28.49) – €0.35 + €0.32 = €2.48 per share.

Case: Aline Nuñes

- Based on Exhibit 1, the breakeven share price for Strategy 6 is closest to:

  A. €22.50.

  B. €28.50.

  C. €33.50.

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Case: Aline Nuñes

- **Solution: B.**

  Strategy 6 is a bear spread, which is a combination of a long put option and a short put option on the same underlying, where the long put has a higher strike price than the short put. In the case of Strategy 6, the April €31.00 put option would be purchased and the April €25.00 put option would be sold. The long put premium is €3.00 and the short put premium is €0.50, for a net cost of €2.50. The breakeven share price is €28.50, calculated as $X_H - (p_H - p_L)$ = €31.00 – (€3.00 – €0.50) = €28.50.

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Case: Aline Nuñes

- Based on Exhibit 1, the maximum gain per share that could be earned if Strategy 7 is implemented is:
  A. €5.74.
  B. €5.76.
  C. unlimited.

Case: Aline Nuñes

- **Solution: B.**

  Strategy 7 describes a short straddle, which is a combination of a short put option and a short call option, both with the same strike price. The maximum gain is €5.76 per share, which represents the sum of the two option premiums, or $c_0 + p_0 = €2.54 + €3.22 = €5.76$. The maximum gain per share is realized if both options expire worthless, which would happen if the share price of XDF at expiration is €75.00.

Case: Aline Nuñes

- Based on Exhibit 1, the best explanation for Nuñes to implement Strategy 8 would be that, between the February and December expiration dates, she expects the share price of XDF to:
  A. decrease.
  B. remain unchanged.
  C. increase.

Case: Aline Nuñes

- **Solution: C.**

  Nuñes would implement Strategy 8, which is a long calendar spread, if she expects the XDF share price to increase between the February and December expiration dates. This strategy provides a benefit from the February short call premium to partially offset the cost of the December long call option. Nuñes likely expects the XDF share price to remain relatively flat between the current price €74.98 and €80 until the February call option expires, after which time she expects the share price to increase above €80. If such expectations come to fruition, the February call would expire worthless and Nuñes would realize gains on the December call option.

Case: Aline Nuñes

- Over the past few months, Nuñes and Pereira have followed news reports on a proposed merger between XDF and one of its competitors. A government antitrust committee is currently reviewing the potential merger. Pereira expects the share price to move sharply upward or downward depending on whether the committee decides to approve or reject the merger next week. Pereira asks Nuñes to recommend an option trade that might allow the firm to benefit from a significant move in the XDF share price regardless of the direction of the move.
- The option trade that Nuñes should recommend relating to the government committee's decision is a:
  - A. collar.
  - B. bull spread.
  - C. long straddle.

Case: Aline Nuñes

- **Solution: C.**

  Nuñes should recommend a long straddle, which is a combination of a long call option and a long put option, both with the same strike price. The committee's announcement is expected to cause a significant move in XDF's share price. A long straddle is appropriate because the share price is expected to move sharply up or down depending on the committee's decision. If the merger is approved, the share price will likely increase, leading to a gain in the long call option. If the merger is rejected, then the share price will likely decrease, leading to a gain in the long put option.

Case: Stanley Kumar Singh

➢ Stanley Kumar Singh, CFA, is the risk manager at SKS Asset Management. He works with individual clients to manage their investment portfolios. One client, Sherman Hopewell, is worried about how short-term market fluctuations over the next three months might impact his equity position in Walnut Corporation. Although Hopewell is concerned about short-term downside price movements, he wants to remain invested in Walnut shares because he remains positive about its long-term performance. Hopewell has asked Singh to recommend an option strategy that will keep him invested in Walnut shares while protecting against a short-term price decline. Singh gathers the information in Exhibit 2 to explore various strategies to address Hopewell's concerns.

Case: Stanley Kumar Singh

➢ Another client, Nigel French, is a trader who does not currently own shares of Walnut Corporation. French has told Singh that he believes that Walnut shares will experience a large move in price after the upcoming quarterly earnings release in two weeks. French also tells Singh, however, that he is unsure which direction the stock will move. French asks Singh to recommend an option strategy that would allow him to profit should the share price move in either direction.

Case: Stanley Kumar Singh

➢ A third client, Wanda Tills, does not currently own Walnut shares and has asked Singh to explain the profit potential of three strategies using options in Walnut: a long straddle, a bull call spread, and a bear put spread. In addition, Tills asks Singh to explain the gamma of a call option. In response, Singh prepares a memo to be shared with Tills that provides a discussion of gamma and presents his analysis on three option strategies:

Strategy 1: A long straddle position at the $67.50 strike option

Strategy 2: A bull call spread using the $65 and $70 strike options

Strategy 3: A bear put spread using the $65 and $70 strike options

Case: Stanley Kumar Singh

Exhibit 2 Walnut Corporation Current Stock Price: $67.79 Walnut Corporation European Options				
Exercise Price	**Market Call Price**	**Call Delta**	**Market Put Price**	**Put Delta**
$55.00	$12.83	1.00	$0.24	–0.05
$65.00	$3.65	0.91	$1.34	–0.29
$67.50	$1.99	0.63	$2.26	–0.42
$70.00	$0.91	0.37	$3.70	–0.55
$80.00	$0.03	0.02	$12.95	–0.76
Note: Each option has 106 days remaining until expiration.				

Case: Stanley Kumar Singh

- The option strategy Singh is *most likely* to recommend to Hopewell is a:

  A. collar.

  B. covered call.

  C. protective put.

Case: Stanley Kumar Singh

- **Solution: C.**

  A protective put accomplishes Hopewell's goal of short-term price protection. A protective put provides downside protection while retaining the upside potential. While Hopewell is concerned about the downside in the short-term, he wants to remain invested in Walnut shares, as he is positive about the stock in the long-term.

Case: Stanley Kumar Singh

- The option strategy that Singh is most likely to recommend to French is a:
  - A. straddle.
  - B. bull spread.
  - C. collar.

Case: Stanley Kumar Singh

- **Solution: A.**

  The long straddle strategy is based on expectations of volatility in the underlying stock being higher than the market consensus. The straddle strategy consists of simultaneously buying a call option and a put option at the same strike price. Singh could recommend that French buy a straddle using near at-the-money options ($67.50 strike). This allows French to profit should the Walnut stock price experience a large move in either direction after the earnings release.

Case: Stanley Kumar Singh

- Based on Exhibit 2, Strategy 1 is profitable when the share price at expiration is closest to:
  - A. $63.00.
  - B. $65.24.
  - C. $69.49.

Case: Stanley Kumar Singh

➢ **Solution: A.**

The straddle strategy consists of simultaneously buying a call option and buying a put option at the same strike price. The market price for the $67.50 call option is $1.99, and the market price for the $67.50 put option is $2.26, for an initial net cost of $4.25 per share. Thus, this straddle position requires a move greater than $4.25 in either direction from the strike price of $67.50 to become profitable. So, the straddle becomes profitable at $67.50 – $4.26 = $63.24 or lower, or $67.50 + $4.26 = $71.76 or higher. At $63.00, the profit on the straddle is positive.

Case: Stanley Kumar Singh

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➢ Based on Exhibit 2, the maximum profit, on a per share basis, from investing in Strategy 2, is closest to:

A. $2.26.

B. $2.74.

C. $5.00.

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Case: Stanley Kumar Singh

金程教育 GOLDEN FUTURE

➢ **Solution: A.**

The bull call strategy consists of buying the lower-strike option and selling the higher-strike option. The purchase of the $65 strike call option costs $3.65 per share, and selling the $70 strike call option generates an inflow of $0.91 per share, for an initial net cost of $2.74 per share. At expiration, the maximum profit occurs when the stock price is $70 or higher, which yields a $5.00 per share payoff ($70 – $65) on the long call position. After deduction of the $2.74 per share cost required to initiate the bull call spread, the profit is $2.26 ($5.00 – $2.74).

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Case: Stanley Kumar Singh

- Based on Exhibit 2, and assuming the market price of Walnut's shares at expiration is $66, the profit or loss, on a per share basis, from investing in Strategy 3, is closest to:

  A. $2.36.

  B. $1.64.

  C. $2.64.

Case: Stanley Kumar Singh

- **Solution: B.**

  The bear put spread consists of buying a put option with a high strike price ($70) and selling another put option with a lower strike price ($65). The market price for the $70 strike put option is $3.70, and the market price for the $65 strike put option is $1.34 per share. Thus, the initial net cost of the bear spread position is $3.70 – $1.34 = $2.36 per share. If Walnut shares are $66 at expiration, the $70 strike put option is in the money by $4.00, and the short position in the $65 strike put expires worthless. After deducting the cost of $2.36 to initiate the bear spread position, the net profit is $1.64 per contract.

Case: Stanley Kumar Singh

- Based on the data in Exhibit 2, Singh would advise Tills that the call option with the largest gamma would have a strike price closest to:

  A. $ 55.

  B. $ 67.50.

  C. $ 80.

Case: Stanley Kumar Singh

- **Solution: B.**

  The $67.50 call option is approximately at the money because the Walnut share price is currently $67.79. Gamma measures the sensitivity of an option's delta to a change in the underlying. The largest gamma occurs when options are trading at the money or near expiration, when the deltas of such options move quickly toward 1.0 or 0.0. Under these conditions, the gammas tend to be largest and delta hedges are hardest to maintain.

Reading 17

Currency Management: An Introduction

Case: Guten Investments GmbH

- Guten Investments GmbH, based in Germany and using the EUR as its reporting currency, is an asset management firm providing investment services for local high net worth and institutional investors seeking international exposures. The firm invests in the Swiss, UK, and US markets, after conducting fundamental research in order to select individual investments. Exhibit 1 presents recent information for exchange rates in these foreign markets.

Case: Guten Investments GmbH

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Exhibit 1. Exchange Rate Data		
	One Year Ago	**Today**
Euro-dollar (USD/EUR)*	1.2730	1.2950
Euro-sterling (GBP/EUR)	0.7945	0.8050
Euro-Swiss (CHF/EUR)	1.2175	1.2080
* The amount of USD required to buy one EUR		

Case: Guten Investments GmbH

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- In prior years, the correlation between movements in the foreign-currency asset returns for the USD-denominated assets and movements in the exchange rate was estimated to be +0.50. After analyzing global financial markets, Konstanze Ostermann, a portfolio manager at Guten Investments, now expects that this correlation will increase to +0.80, although her forecast for foreign-currency asset returns is unchanged.
- Ostermann believes that currency markets are efficient and hence that long-run gains cannot be achieved from active currency management, especially after netting out management and transaction costs. She uses this philosophy to guide hedging decisions for her discretionary accounts, unless instructed otherwise by the client.

Case: Guten Investments GmbH

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- Ostermann is aware, however, that some investors hold an alternative view on the merits of active currency management. Accordingly, their portfolios have different investment guidelines. For these accounts, Guten Investments employs a currency specialist firm, Umlauf Management, to provide currency overlay programs specific to each client's investment objectives. For most hedging strategies, Umlauf Management develops a market view based on underlying fundamentals in exchange rates. However, when directed by clients, Umlauf Management uses options and a variety of trading strategies to unbundle all of the various risk factors (the "Greeks") and trade them separately.
- Ostermann conducts an annual review for three of her clients and gathers the summary information presented in Exhibit 2.

Exhibit 2. Select Clients at Guten Investments	
Client	**Currency Management Objectives**
Adele Kastner – A high net worth individual with a low risk tolerance.	Keep the portfolio's currency exposures close, if not equal to, the benchmark so that the domestic-currency return is equal to the foreign-currency return.
Braunt Pensionskasse – A large private-company pension fund with a moderate risk tolerance.	Limited discretion which allows the actual portfolio currency risk exposures to vary plus-or-minus 5% from the neutral position.
Franz Trading GmbH – An exporting company with a high risk tolerance.	Discretion with respect to currency exposure is allowed in order to add alpha to the portfolio.

Case: Guten Investments GmbH

- Based on Exhibit 1, the domestic-currency return over the last year (measured in EUR terms) was higher than the foreign-currency return for:
  A. USD-denominated assets.
  B. GBP-denominated assets.
  C. CHF-denominated assets.

- **Solution: C**
  The domestic-currency return is a function of the foreign-currency return and the percentage change of the foreign currency against the domestic currency. Mathematically, the domestic-currency return is expressed as:

Case: Guten Investments GmbH

$R_{DC} = (1 + R_{FC})(1 + R_{FX}) – 1$

where R_{DC} is the domestic-currency return (in percent), R_{FC} is the foreign-currency return, and R_{FX} is the percentage change of the foreign currency against the domestic currency. Note that this R_{FX} expression is calculated using the investor's domestic currency (the EUR in this case) as the *price* currency in the P/B quote. This is different than the market-standard currency quotes in Exhibit 1, where the EUR is the *base* currency in each of these quotes. Therefore, for the foreign currency (USD, GBP, or CHF) to *appreciate* against the EUR, the market-standard quote (USD/EUR, GBP/EUR, or CHF/EUR, respectively) must *decrease*; i.e. the EUR must depreciate.

Case: Guten Investments GmbH

The Euro-Swiss (CHF/EUR) is the only spot rate with a negative change (from 1.2175 to 1.2080), meaning the EUR depreciated against the CHF (the CHF/EUR rate decreased). Or put differently, the CHF appreciated against the EUR, adding to the EUR-denominated return for the German investor holding CHF-denominated assets. This would result in a higher domestic-currency return (R_{DC}), for the German investor, relative to the foreign-currency return (R_{FC}) for the CHF-denominated assets. Both the Euro-dollar (USD/EUR) and Euro-sterling (GBP/EUR) experienced a positive change in the spot rate, meaning the EUR appreciated against these two currencies (the USD/EUR rate and the GBP/EUR rate both increased). This would result in a lower domestic-currency return (R_{DC}) for the German investor relative to the foreign-currency return (R_{FC}) for the USD- and GBP-denominated assets.

Case: Guten Investments GmbH

A is incorrect because the Euro-dollar (USD/EUR) experienced a positive change in the spot rate, meaning the EUR appreciated against the USD (the USD/EUR rate increased). This would result in a lower domestic-currency (i.e. EUR-denominated) return relative to the foreign-currency return for the USD-denominated assets, since the USD has depreciated against the EUR.

B is incorrect because the Euro-sterling (GBP/EUR) experienced a positive change in the spot rate, meaning the EUR appreciated against the GPB (the GBP/EUR rate increased). This would result in a lower domestic-currency (i.e. EUR-denominated) return relative to the foreign-currency return for the GBP-denominated assets, since the GBP has depreciated against the EUR.

Case: Guten Investments GmbH

- Based on Ostermann's correlation forecast, the expected domestic-currency return (measured in EUR terms) on USD-denominated assets will most likely:
  A. increase.
  B. decrease.
  C. remain unchanged.

- **Solution: C**
  An increase in the expected correlation between movements in the foreign-currency asset returns and movements in the spot exchange rates from 0.50 to 0.80 would increase the domestic-currency return risk but would not change the level of expected domestic-currency return.

Case: Guten Investments GmbH

The domestic-currency return risk is a function of the foreign-currency return risk [$\sigma(R_{FC})$] the exchange rate risk [$\sigma(R_{FX})$] and the correlation between the foreign-currency returns and exchange rate movements. Mathematically, this is expressed as:

$$\sigma^2(R_{DC}) \approx \sigma^2(R_{FC}) + \sigma^2(R_{FX}) + 2\sigma(R_{FC})\sigma(R_{FX})\rho(R_{FC}R_{FX})$$

If the correlation increases from +0.50 to +0.80, then the variance of the expected domestic-currency return will increase—but this will not affect the level of the expected domestic-currency return (RDC). Refer to the equation shown for the answer in Question 1 and note that Ostermann's expected RFC has not changed. (Once again, note as well that RFX is defined with the domestic currency as the price currency.)

Case: Guten Investments GmbH

A and B are incorrect. An increase in the expected correlation between movements in the foreign-currency asset returns and movements in the spot rates from 0.50 to 0.80 would increase the domestic-currency return risk but would not impact the expected domestic-currency return.

Case: Guten Investments GmbH

- Based on Ostermann's views regarding active currency management, the percentage of currency exposure in her discretionary accounts that is hedged is most likely:

  A. 0%.

  B. 50%.

  C. 100%.

Case: Guten Investments GmbH

- **Solution: A**

  Guten believes that, due to efficient currency markets, there should not be any long-run gains for speculating (or active management) in currencies, especially after netting out management and transaction costs. Therefore, both currency hedging and actively trading currencies represent a cost to the portfolio with little prospect of consistently positive active returns. Given a long investment horizon and few immediate liquidity needs, Guten is most likely to choose to forgo currency hedging and its associated costs.

Case: Guten Investments GmbH

- B and C are incorrect because given a long investment horizon and little immediate liquidity needs, Guten is most likely to choose to forgo currency hedging and its associated costs. Guten believes that due to efficient currency markets there should not be any long-run gains when speculating in currencies, especially after netting out management and transaction costs.

Case: Guten Investments GmbH

- The active currency management approach that Umlauf Management is least likely to employ is based on:
  A. volatility trading.
  B. technical analysis.
  C. economic fundamentals.

- **Solution: B**

  Umlauf develops a market view based on underlying fundamentals in exchange rates (an economic fundamental approach). When directed by clients, Umlauf uses options and a variety of trading strategies to unbundle all of the various risk factors and trades them separately (a volatility trading approach).

Case: Guten Investments GmbH

A market technical approach would entail forming a market view based on technical analysis (i.e., a belief that historical prices incorporate all relevant information on future price movements and that such movements have a tendency to repeat).

A is incorrect because, in using options and a variety of trading strategies to unbundle all of the various risk factors and trade them separately, Umlauf is likely to periodically employ volatility trading-based currency strategies.

C is incorrect because, in developing a market view based on underlying fundamentals in exchange rates, Umlauf does utilize an economic fundamentals approach.

Case: Guten Investments GmbH

- Based on Exhibit 2, the currency overlay program most appropriate for Braunt Pensionskasse would:

  A. be fully passive.

  B. allow limited directional views.

  C. actively manage foreign exchange as an asset class.

- **Solution: B**

  Braunt Pensionskasse provides the manager with limited discretion in managing the portfolio's currency risk exposures.

Case: Guten Investments GmbH

This would be most consistent with allowing the currency overlay manager to take directional views on future currency movements (within predefined bounds) where the currency overlay is limited to the currency exposures already in the foreign asset portfolio. It would not be appropriate to use a fully-passive hedging approach since it would eliminate any alpha from currency movements. Further, a currency overlay program, which considers "foreign exchange as an asset class", would likely expose Braunt's portfolio to more currency risk than desired given the given primary performance objectives.

A is incorrect because a directional view currency overlay program is most appropriate given the limited discretion Braunt Pensionskasse has given the manager. A fully passive currency overlay program is more likely to be used when a client seeks to hedge all the currency risk.

Case: Guten Investments GmbH

C is incorrect because a directional view currency overlay program is most appropriate given the limited discretion Braunt Pensionskasse has given the manager. In contrast, the concept of "foreign exchange as an asset class" allows the currency overlay manager to take currency exposure positions in any currency pair where there is value-added to be harvested.

Case: Guten Investments GmbH

- Based on Exhibit 2, the client most likely to benefit from the introduction of an additional overlay manager is:
  A. Adele Kastner.
  B. Braunt Pensionskasse.
  C. Franz Trading GmbH.

- **Solution: C**
  The primary performance objective of Franz Trading GmbH is to add alpha to the portfolio, and thus has given the manager discretion in trading currencies. This is essentially a "foreign exchange as an asset class" approach.

Case: Guten Investments GmbH

Braunt Pensionskasse and Kastner have more conservative currency strategies, and thus are less likely to benefit from the different strategies that a new overlay manager might employ.

A is incorrect because Franz Trading GmbH is more likely to benefit from the introduction of an additional overlay manager. Kastner is more likely to have a fully passive currency overlay program.

B is incorrect because Franz Trading GmbH is more likely to benefit from the introduction of an additional overlay manager. Braunt is more likely to have a currency overlay program where the manager takes a directional view on future currency movements.

Case: Li Jiang

- Li Jiang is an international economist operating a subscription website through which she offers financial advice on currency issues to retail investors. One morning she receives four subscriber e-mails seeking guidance.
  - Subscriber 1: "As a French national now working in the United States, I hold US dollar-denominated assets currently valued at USD 700,000. The USD/EUR exchange rate has been quite volatile and now appears oversold based on historical price trends. With my American job ending soon, I will return to Europe. I want to protect the value of my USD holdings, measured in EUR terms, before I repatriate these funds back to France. To reduce my currency exposure I am going to use currency futures contracts. Can you explain the factors most relevant to implementing this strategy?"

Case: Li Jiang

- Subscriber 2: "I have observed that many of the overseas markets for Korean export goods are slowing, while the United States is experiencing a rise in exports. Both trends can combine to possibly affect the value of the won (KRW) relative to the US dollar. As a result, I am considering a speculative currency trade on the KRW/USD exchange rate. I also expect the volatility in this exchange rate to increase."

Case: Li Jiang

- Subscriber 3: "India has relatively high interest rates compared to the United States and my market view is that this situation is likely to persist. As a retail investor actively trading currencies, I am considering borrowing in USD and converting to the Indian rupee (INR).I then intend to invest these funds in INR-denominated bonds, but without using a currency hedge."
- Subscriber 4: "I was wondering if trading in emerging market currencies provides the more opportunities for superior returns through active management than trading in Developed Market currencies."

Case: Li Jiang

- For Subscriber 1, the *most* significant factor to consider would be:

  A. margin requirements.

  B. transaction costs of using futures contracts.

  C. different quoting conventions for future contracts.

Case: Li Jiang

- **Solution: A**

  Exchange-traded futures contract not only have initial margin requirements, they also have daily mark-to-market and, as a result, can be subject to daily margin calls. Market participants must have sufficient liquidity to meet margin calls, or have their positions involuntarily liquidated by their brokers. Note that the risk of daily margin calls is not a feature of most forwards contracts; nor is initial margin. (However, this is changing among the largest institutional players in FX markets as many forward contracts now come with what are known as Collateral Support Annexes—CSAs—in which margin can be posted. Posting additional margin would typically not be a daily event, however, except in the case of extreme market moves.)

Case: Li Jiang

B is incorrect because futures contracts have low transactions costs.

C is incorrect because whether the EUR is the price or the base currency in the quote will not affect the hedging process. In fact, on the CME the quote would be the market-standard USD/EUR quote, with the EUR as the base currency.

Case: Li Jiang

- For Subscriber 2, and assuming all of the choices relate to the KRW/USD exchange rate, the *best* way to implement the trading strategy would be to:

  A. write a straddle.

  B. buy a put option.

  C. use a long NDF position.

Case: Li Jiang

- **Solution: C**

  Based on predicted export trends, Subscriber 2 most likely expects the KRW/USD rate to increase (i.e., the won—the price currency—to depreciate relative to the USD). This would require a long forward position in a forward contract, but as a country with capital controls, a NDF would be used instead. (Note: While forward contracts offered by banks are generally an institutional product, not retail, the retail version of a non-deliverable forward contract is known as a "contract for differences" (CFD) and is available at several retail FX brokers.)

Case: Li Jiang

A is incorrect because Subscriber 2 expects the KRW/USD rate to increase. A short straddle position would be used when the direction of exchange rate movement is unknown and volatility is expected to remain low.

B is incorrect because a put option would profit from a decrease of the KRW/USD rate, not an increase (as expected). Higher volatility would also make buying a put option more expensive.

Case: Li Jiang

- Which of the following market developments would be *most* favorable for Subscriber 3's trading plan?

  A. A narrower interest rate differential.

  B. A higher forward premium for INR/USD.

  C. Higher volatility in INR/USD spot rate movements.

Case: Li Jiang

- **Solution: B**

  Subscriber 3's carry trade strategy is equivalent to trading the forward rate bias, based on the historical evidence that the forward rate is not the center of the distribution for the spot rate. Applying this bias involves buying currencies selling at a forward discount and selling currencies trading at a forward premium. So a higher forward premium on the lower yielding currency—the USD, the base currency in the INR/USD quote—would effectively reflect a more profitable trading opportunity. That is, a higher premium for buying or selling the USD forward is associated with a lower US interest rate compared to India. This would mean a wider interest rate differential in favor of Indian instruments, and hence potentially more carry trade profits.

Case: Li Jiang

A is incorrect because Subscriber 3's carry trade strategy depends on a wide interest rate differential between the high-yield country (India) and the low-yield country (the United States). The differential should be wide enough to compensate for the unhedged currency risk exposure.

C is incorrect because a guide to the carry trade's riskiness is the volatility of spot rates on the involved currencies, with rapid movements in exchange rates often associated with a panicked unwinding of carry trades. All things being equal, higher volatility is worse for carry trades.

Case: Li Jiang

- Jiang's *best* response to Subscriber 4 would be that active trading in trading in emerging market currencies:

  A. typically leads to return distributions that are positively skewed.

  B. should not lead to higher returns because FX markets are efficient.

  C. often leads to higher returns through carry trades, but comes with higher risks and trading costs.

Case: Li Jiang

- **Solution: C**

  Emerging market currencies are often the investment currencies in the carry trade. This reflects the higher yields often available in their money markets compared to Developed Market economies (funding currencies are typically low-yield currencies such as the JPY). This can lead to higher holding returns, but these higher returns can also come with higher risks: carry trades are occasionally subject to panicked unwinds in stressed market conditions. When this occurs, position exit can be made more difficult by market illiquidity and higher trading costs (wider bid/offer spreads). The leverage involved in the carry trade can magnify trading losses under these circumstances.

Case: Li Jiang

A is incorrect because return distributions are often negatively skewed, reflecting the higher event risk (panicked carry trade unwinds, currency pegs being re-set, etc.) associated with the carry trade.

B is incorrect because although FX markets are typically efficient (or very close thereto) this does not mean that higher returns are not available. The key question is whether these are abnormally high risk-adjusted returns. Higher return in an efficient market comes with higher risk. The higher (short-term) return in the carry trade reflects the risk premia for holding unhedged currency risk, in the context of a favorable interest rate differential.

Case: Rika Björk

- Rika Björk runs the currency overlay program at a large Scandinavian investment fund, which uses the Swedish krona (SEK) as its reporting currency. She is managing the fund's exposure to GBP-denominated assets, which are currently hedged with a GBP 100,000,000 forward contract (on the SEK/GBP cross rate, which is currently at 10.6875 spot). The maturity for the forward contract is December 1, which is still several months away. However, since the contract was initiated the value of the fund's assets has declined by GBP 7,000,000. As a result, Björk wants to rebalance the hedge immediately.

Case: Rika Björk

- Next Björk turns her attention to the fund's Swiss franc (CHF) exposures. In order to maintain some profit potential Björk wants to hedge the exposure using a currency option, but at the same time, she wants to reduce hedging costs. She believes that there is limited upside for the SEK/CHF cross rate.
- Björk then examines the fund's EUR-denominated exposures. Due to recent monetary tightening by the Riksbank (the Swedish central bank) forward points for the SEK/EUR rate have swung to a premium. The fund's EUR-denominated exposures are hedged with forward contracts.

Case: Rika Björk

- Finally Björk turns her attention to the fund's currency exposures in several emerging markets. The fund has large positions in several Latin American bond markets, but Björk does not feel that there is sufficient liquidity in the related foreign exchange derivatives to easily hedge the fund's Latin American bond markets exposures. However, the exchange rates for these countries, measured against the SEK, are correlated with the MXN/SEK exchange rate. (The MXN is the Mexican peso, which is considered to be among the most liquid Latin American currencies). Björk considers using forward positions in the MXN to cross-hedge the fund's Latin American currency exposures.

Case: Rika Björk

- To rebalance the SEK/GBP hedge, and assuming all instruments are based on SEK/GBP, Björk would buy:
  A. GBP 7,000,000 spot.
  B. GBP 7,000,000 forward to December 1.
  C. SEK 74,812,500 forward to December 1.

- **Solution: B**

  The GBP value of the assets has declined, and hence the hedge needs to be *reduced* by GBP 7,000,000. This would require buying the GBP forward to net the outstanding (short) forward contract to an amount less than GBP 100,000,000.

Case: Rika Björk

A is incorrect because to rebalance the hedge (reduce the net size of the short forward position) the GBP must be bought *forward*, not with a spot transaction.

C is incorrect because the GBP must be bought, not sold. Buying SEK against the GBP is equivalent to selling GBP. Moreover, the amount of SEK that would be sold forward (to buy GBP 7,000,000 forward) would be determined by the *forward* rate, not the spot rate (7,000,000 × 10.6875 = 74,812,500).

Case: Rika Björk

- Given her investment goals and market view, and assuming all options are based on SEK/CHF, the *best* strategy for Björk to manage the fund's CHF exposure would be to buy an:
  A. ATM call option.
  B. ITM call option and write an OTM call option.
  C. OTM put option and write an OTM call option.

- **Solution: C**

  The fund holds CHF-denominated assets and hence Björk wants to protect against a depreciation of the CHF against the SEK, which would be a down-move in the SEK/CHF cross rate.

Case: Rika Björk

An OTM put option provides some downside protection against such a move, while writing an OTM call option helps reduce the cost of this option structure. Note that Björk does not expect that the SEK/CHF rate will increase, so this option (in her view) will likely expire OTM and allow her to keep the premia. This hedging structure is known as a short risk reversal (or a collar) and is a popular hedging strategy.

A is incorrect because the ATM call option will not protect against a decrease in the SEK/CHF rate. An ATM option is also expensive (compared to an OTM option). Note that Björk does not expect the SEK/CHF rate to increase, so would not want a long call option position for this rate.

B is incorrect because this structure is expensive (via the long ITM call option) and does not protect against a decrease in the SEK/CHF rate.

Case: Rika Björk

- Given the recent movement in the forward premium for the SEK/EUR rate, Björk can expect that the hedge will experience higher:
  - A. basis risk.
  - B. roll yield.
  - C. premia income.

- **Solution: B**

  To hedge the EUR-denominated assets Björk will be selling forward contracts on the SEK/EUR cross rate. A higher forward premium will result in higher roll return as Björk is selling the EUR forward at a higher all-in forward rate, and closing out the contract at a lower rate (all else equal), given that the forward curve is in contango.

Case: Rika Björk

A is incorrect because Björk is hedging EUR-denominated assets with a EUR-denominated forward contract. While it is true that the gap between spot and forward rates will be higher the higher the interest rate differential between countries, this gap (basis) converges to zero near maturity date, when the forward contracts would be rolled.

C is incorrect because forward contracts do not generate premia income; writing options does.

Case: Rika Björk

- The *most* important risk to Björk's Latin American currency hedge would be changes in:
  - A. forward points.
  - B. exchange rate volatility.
  - C. cross-currency correlations.

- **Solution: C**
  A cross hedge exposes the fund to basis risk; that is, the risk that the hedge fails to protect against adverse currency movements because the correlations between the value of the assets being hedged and the hedging instrument change.

Case: Rika Björk

- A is incorrect because movements in forward points (and hence roll yield) would be of secondary importance compared to the basis risk of a cross hedge.
- B is incorrect because exchange rate volatility would not necessarily affect a hedge based on forward contracts, as long as the correlations between the underlying assets and the hedge remained stable. Although relevant, volatility in itself is not the "most" important risk to consider for a cross-hedge. (However, movements in volatility would affect hedges based on currency options.)

Case: Kalila Al-Khalili

- Kalila Al-Khalili has been hired as a consultant to a Middle Eastern sovereign wealth fund. The fund's oversight committee has asked her to examine the fund's financial characteristics and recommend an appropriate currency management strategy given the fund's Investment Policy Statement. After a thorough study of the fund and its finances, Al-Khalili reaches the following conclusions:
  - The fund's mandate is focused on the long-term development of the country, and the royal family (who are very influential on the fund's oversight committee) are prepared to take a long-term perspective on the fund's investments.
  - The fund's strategic asset allocation is tilted towards equity rather than fixed-income assets.

Case: Kalila Al-Khalili

- The fund's strategic asset allocation is tilted towards equity rather than fixed-income assets.
- Both its fixed-income and equity portfolios have a sizeable exposure to emerging market assets.
- Currently, about 90% of exchange rate exposures are hedged although the IPS allows a range of hedge ratios.
- Liquidity needs of the fund are minimal, since the government is running a balanced budget and is unlikely to need to dip into the fund in the near term to cover fiscal deficits. Indeed, the expected lifetime of country's large oil reserves has been greatly extended by recent discoveries, and substantial oil royalties are expected to persist into the future.

Case: Kalila Al-Khalili

- Based on her investigation, Al-Khalili would *most* likely recommend:
  - A. active currency management.
  - B. a hedging ratio closer to 100%.
  - C. a narrow discretionary band for currency exposures.

- **Solution: A**

  The fund has a long-term perspective, few immediate liquidity needs, and a lower weight in fixed income that in equities (bond portfolios are typically associated with hedge ratios closer to 100% than equity portfolios). The emerging market exposure would also support active management, given these countries' typically higher yields (carry trade) and often volatile exchange rates.

Case: Kalila Al-Khalili

B is incorrect because the characteristics of the fund and the beneficial investor (in this case, the royal family) do not argue for a conservative currency strategy.

C is incorrect because a more active currency management strategy would be more suitable for this fund.

问题反馈

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