LO.a: Calculate and interpret the bid–ask spread on a spot or forward foreign currency quotation and describe the factors that affect the bid–offer spread.

1. Which of the following factors will *most likely* lead to a high bid-offer spread for a currency trade?
   A. Low market volatility.
   B. A large transaction.
   C. Currency pairs that are heavily traded.

LO.b: Identify a triangular arbitrage opportunity and calculate its profit, given the bid–offer quotations for three currencies.

2. Suppose the following quotes are available in the interbank market: USD/EUR = 1.3649/1.3651 and JPY/USD = 76.64/76.66. A dealer is quoting a rate of JPY/EUR = 104.66/104.68. Based on this information the *most appropriate* recommendation regarding the triangular arbitrage trade is to:
   A. not execute the trade, no arbitrage profits are possible.
   B. execute the trade, buy EUR from the interbank market and sell them to the dealer.
   C. execute the trade, buy EUR from the dealer and sell them in the interbank market.

LO.c: Distinguish between spot and forward rates and calculate the forward premium/ discount for a given currency.

3. The following table provides the USD/EUR spot rate and forward points.

Maturity	Spot Rate or Forward Points
Spot (USD/EUR)	1.3549/1.3651
One month	–5.6/–5.1
Three months	–15.9/–15.3
Six months	–37.0/–36.3
Twelve months	–94.3/–91.8

   Based on this information the twelve month USD/EUR all-in rate is:
   A. 1.3533/1.3535
   B. 1.3412/1.3415
   C. 1.3455/1.3559

LO.d: Calculate the mark-to-market value of a forward contract.

4. Suppose that a market participant bought EUR 10 million for delivery against the USD in six months at an "all-in" forward rate of 1.3554 USD/EUR. Three months later, the market participant wants to close out this forward contract. Assume the three-month USD interest rate is 3.6% and the bid–offer for spot and forward points are as follows:
   Spot rate (USD/EUR) 1.3549/1.3651
   Three-month points: -60/-70
   The mark-to-market value of the original long EUR 10 million six-month forward, when it is closed out three months prior to settlement is *closest* to:

A. -64,420.22 USD.
B. -65,000.00 USD.
C. +64,420.22 USD.

LO.e: Explain international parity relations (covered and uncovered interest rate parity, purchasing power parity, and the international Fisher effect).

5. The current EUR/USD exchange rate is 1.0000. The interest rate in EUR is 6%. The interest rate in USD is 4%. According to the uncovered interest rate parity:
   A. EUR will strengthen by 2%.
   B. USD will strengthen by 4%.
   C. USD will strengthen by 2%.

6. The current EUR/USD exchange rate is 1.1234. The inflation is EUR is 5%. The inflation in USD is 2%. According to the relative version of PPP, the percent change in the spot exchange rate $\%\Delta S_{EUR/USD}$ will be closest to:
   A. 3%.
   B. -3%.
   C. 2%.

LO.f: Describe relations among the international parity conditions.

LO.g: Evaluate the use of the current spot rate, the forward rate, purchasing power parity, and uncovered interest parity to forecast future spot exchange rates.

LO.h: Explain approaches to assessing the long-run fair value of an exchange rate.

7. Which of the following approaches estimates the 'equilibrium exchange rates on the basis of the trends in several key macro-economic variables, such as the country's net foreign asset position, its terms of trade, and its relative productivity'?
   A. Macroeconomic balance approach.
   B. External sustainability approach.
   C. Reduced-form econometric model.

LO.i: Describe the carry trade and its relation to uncovered interest rate parity and calculate the profit from a carry trade.

8. Consider two currencies USD and INR. USD has a yield of 3%. INR has a yield of 10%. The spot rate for INR/USD is 65 and is expected to remain stable. To perform a carry trade the investor will:
   A. Take a long position in INR and a short position in USD.
   B. Take a long position in USD and a short position in INR.
   C. Take short positions in both USD and INR.

LO.j: Explain how flows in the balance of payment accounts affect currency exchange rates.

9. If we have a boom-like condition in an emerging market economy, then in the near term capital inflows into the economy will *most likely* lead to:
    A. a decrease in the expected inflation in the EM economy.
    B. a decrease in the real exchange rate $q_{l/h}$.
    C. a decrease in the risk premia for EM assets.

LO.k: Describe the Mundell–Fleming model, the monetary approach, and the asset market (portfolio balance) approach to exchange rate determination.

LO.m: Explain the potential effects of monetary and fiscal policy on exchange rates.

10. According to the Mundell-Fleming model, under conditions of high capital mobility an expansionary monetary policy and a restrictive fiscal policy will:
    A. lead to appreciation of the domestic currency.
    B. lead to depreciation of the domestic currency.
    C. have an ambiguous impact on the value of the domestic currency.

LO.l: Forecast the direction of the expected change in an exchange rate based on balance of payment, Mundell–Fleming, monetary, and asset market approaches to exchange rate determination.

11. The following information is available for a developed market economy.

Current policy rate(nominal)	4.00%
Neutral real policy rate	3.50%
Current inflation rate	2.00%
Target inflation rate	3.00%
Current output gap	-1.00%

    Assuming that the DM central bank is following the Taylor Rule and that the inflation and output gaps are equally weighted ($\alpha = \beta = 0.5$), the central bank will *most likely*:
    A. leave the policy rate unchanged,
    B. increase the policy rate by 0.50 percent.
    C. increase the policy rate by 1.00 percent.

LO.n: Describe objectives of central bank intervention and capital controls and describe the effectiveness of intervention and capital controls.

12. A country is facing an unwanted surge in capital inflows. If the currency is fairly valued or overvalued and there is no inflation threat, then which of the following is the *most appropriate* action that the country's central bank can take?
    A. Allow the currency to appreciate.
    B. Carry out sterile intervention.
    C. Carry out unsterile intervention.

LO.o: Describe warning signs of a currency crisis.

13. Which of the following is *most likely* a good warning system for currency crises?
    A. A system that has a strong record of predicting actual crises, but also generates a lot of false signals.
    B. A system that includes a wide variety of economic indicators, including those for which data is available after a significant lag.
    C. A system that starts flashing well in advance of an actual currency crises and gives market participants enough time to adjust or hedge their portfolios before the crises hits.

LO.p: Describe uses of technical analysis in forecasting exchange rates.

14. Analyst 1: Technical analysis may be used to manage the downside risk associated with FX portfolios.
    Analyst 2: Over short periods of time, most studies indicate that there exists a strong negative, contemporaneous relationship between cumulative order flow and exchange rates.
    A. Analyst 1 is correct.
    B. Analyst 2 is correct.
    C. Both analysts are incorrect.

Solutions

1. B is correct. Currency pairs that are heavily traded will have low bid-offer spreads. If market volatility is low market participants will charge a lower price for taking on risk, leading to low bid-offer spreads. Larger transactions have high bid-offer spreads compared to small transactions.

2. B is correct. The implied cross rate for JPY/EUR can be calculated as
$$\left(\frac{JPY}{USD}\right)_{bid} = \left(\frac{JPY}{USD}\right)_{bid} \times \left(\frac{USD}{EUR}\right)_{bid} = 76.64 \times 1.3649 = 104.61$$
$$\left(\frac{JPY}{USD}\right)_{offer} = \left(\frac{JPY}{USD}\right)_{offer} \times \left(\frac{USD}{EUR}\right)_{offer} = 76.66 \times 1.3651 = 104.65$$
The implied cross rate is JPY/EUR = 104.61/104.65.
Since the dealer is quoting a rate of JPY/EUR of 104.66/104.68, market participants will buy EUR from the cheaper source and sell to more expensive one, i.e they will buy EUR from the interbank market at 104.65 and sell them to the dealer at 104.66.

3. C is correct.
$$\text{Twelve month forward bid} = 1.3549 + \frac{-94.3}{10{,}000} = 1.3455$$
$$\text{Twelve month forward ask} = 1.3651 + \frac{-91.8}{10{,}000} = 1.3559$$

4. A is correct.
To create an equal and offsetting forward position, the market participant would sell EUR 10 million three months forward using the USD/EUR spot exchange rate and forward points in effect at that time.
To sell EUR (the base currency in the USD/EUR quote), we will be calculating the *bid* side of the market. Hence, the appropriate all-in three-month forward rate to use is: 1.3549+ (-60)/10,000 = 1.3489
The USD cash flow at settlement date will equal
(1.3489 – 1.3554) × 10,000,000 = -USD 65,000.
The present value of this amount is found by discounting the settlement day cash flow by the three-month discount rate. Because this amount is in USD, we use the three-month USD discount rate. The present value of this future USD cash flow is then:
$$= \frac{-65{,}000 \text{ USD}}{\left(1 + 0.036 \times \frac{90}{360}\right)} = -64{,}420.22 \text{ USD}$$

5. C is correct. According to uncovered interest rate parity, the expected percentage change in spot rate will be: if – id = 6% - 4% = 2%. So, the uncovered interest rate parity predicts that the base currency i.e. USD will strengthen by 2%.

6. A is correct. According to the relative version (also called the ex-ante version), the percentage change in the spot exchange rate will completely be determined by the difference between the foreign and domestic inflation rates.
   $\%\Delta S_{f/d} \cong \pi_f - \pi_d$ = 5% - 2% = 3%

7. C is correct.

8. A is correct. To perform a carry trade, the investor will take a long position (invest) in the high yield currency i.e. INR and a short position (borrow) in the low yield currency i.e. USD.

9. C is correct. Given the current investor enthusiasm for the EM country's assets and the boom-like conditions in the country, it is most likely that in the near term, the real exchange rate is increasing. At the same time, expected inflation in the EM country is also likely increasing and—given the enthusiasm for EM assets—that the risk premia is decreasing.

10. B is correct. Under conditions of high capital mobility we have:

	Expansionary Monetary Policy	Restrictive Monetary Policy
Expansionary Fiscal Policy	Ambiguous	Domestic currency appreciates
Restrictive Fiscal Policy	Domestic currency depreciates	Ambiguous

11. B is correct. Under the Taylor rule, the prescribed central bank policy rate is equal to:
    i = 3.50% + 2.00% + ½(2.00% – 3.00%) + ½(-1.00 %) = 4.5%
    The current policy rate is 4%. So we require an increase in 0.5%

12. C is correct. If the currency is fairly valued or overvalued and there is no inflation threat then carry out unsterile intervention. Here the monetary base is expanded, that leads to lower interest rates, which discourages further capital inflows.

13. C is correct. Option A and B describe negative factors that reduce the effectiveness of a warning system.

14. A is correct. Most studies find that there exists a strong positive, contemporaneous relationship between cumulative order flow and exchange rates over short periods of time.