Test Bank for International Financial Management 3rd Bekaert

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Chapter 2

The Foreign Exchange Market

QUESTIONS

1. What is an exchange rate?

Answer: An exchange rate is the relative price of two currencies, like the U.S. dollar price of the euro, the Thai baht price of the Malaysian ringgit, or the Mexican peso price of the Canadian dollar.

2. What is the structure of the foreign exchange market? Is it like the New York Stock Exchange?

Answer: The interbank foreign exchange market is a very large, diverse, over-the-counter market, not a physical trading place where buyers and sellers gather to agree on a price to exchange currencies. Traders, who are employees of financial institutions in the major financial cities around the world, deal with each other primarily over the phone or via computer, with written or formal electronic confirmations of transactions occurring only later.

3. What is a spot exchange rate contract? When does delivery occur on a spot contract?

Answer: When currencies in the interbank spot market are traded, certain business conventions are followed. For example, when the trade involves the U.S. dollar, business convention dictates that spot contracts are settled in 2 business days—that is, the payment of one currency and receipt of the other currency occurs in 2 business days. One business day is necessary because of the back-office paperwork involved in any financial transaction. The second day is needed because of the time zone differences around the world.

Several exceptions to the 2-business-day rule are noteworthy. First, for exchanges between the U.S. dollar and the Canadian dollar or the Mexican peso, the rule is 1 business day. Second, if the transaction involves the dollar and the first of the 2 days is a holiday in the United States but not in the other settlement center, the first day is counted as a business day for settlement purposes. Third, Fridays are not part of the business week in most Middle Eastern countries, although Saturdays and Sundays are. Hence, non–Middle Eastern currencies settle on Fridays, and Middle Eastern currencies settle on Saturdays.

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4. What was the Japanese yen spot price of the U.S. dollar on July 21, 2015?

Answer: Examining Exhibit 2.5 for July 21, 2015 we find that the Japanese yen spot price of the U.S. dollar was ¥123.84/$.

5. What was the U.S. dollar spot price of the Swiss franc on July 21, 2015?

Answer: Examining Exhibit 2.5 for July 21, 2015, we find that the U.S. dollar spot price of the Swiss franc was $1.0425/CHF.

6. How large are the bid–ask spreads in the interbank spot market? What is their purpose?

Answer: The purpose of the bid-ask spread is to allow traders to profit by buying a currency at a low bid price and selling that currency at a higher ask price. Bid–ask spreads in the spot foreign exchange market are quite small, often only two or three basis points. For example, a yen–dollar trader might quote a bid price of yen per dollar at which she is willing to buy dollars in exchange for yen of, say, ¥123.83/$. The trader would then quote a higher ask price at which she is willing to sell dollars for yen, say, at an exchange rate of ¥123.85/$. This percentage bid-ask spread is

$$\frac{¥123.85/\$ - ¥123.83/\$}{(¥123.85/\$ + ¥123.83/\$)/2} \times 100 = 0.02\%$$

7. What was the euro price of the British pound on July 21, 2015? Why?

Answer: We can find this information two ways. The cross-rate quote from Exhibit 2.6 is €1.42725/£. The exchange rates of euros per dollar and dollars per pound from Exhibit 2.5 are €0.9153/$ and $1.5593/£. We know that there would be a triangular arbitrage possibility if the cross-rate differs from the indirect rate using the dollar as an intermediary. Thus, we find the same value if we calculate

$$€0.9153/\$ \times \$1.5593/£ = €1.42723/£$$

8. If the direct euro price of the British pound is higher than the indirect euro price of the British pound using the dollar as a vehicle currency, how could you make a profit by trading these currencies?

Answer: If the direct euro price of the British pound is higher than the indirect euro price of the British pound using the dollar as a vehicle currency, there would be a triangular arbitrage. We would want to buy pounds at the indirect low price and sell pounds at the direct high price. Suppose in Question 7 that the direct price euros per pound were €1.4650/£ and the exchange rates versus the dollar are €0.9153/$ and $1.5593/£. The indirect euro price of the pound is therefore

$$€0.9153/\$ \times \$1.5593/£ = €1.4272/£$$

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If we start with €10,000,000, we can convert euros to dollars and get

€10,000,000 / €0.9153/$ = $10,925,380.

Converting these dollars into pounds gives

$10,925,380 / $1.5593/£ = £7,006,593

Converting these pounds into euros gives

€1.4650/£ × £7,006,593 = €10,264,659.

Thus, we make a profit of €264,659 or 2.65%.

9. What is an appreciation of the dollar relative to the pound? What happens to the dollar price of the pound in this situation?

Answer: An appreciation of the dollar relative to the pound means that it takes fewer dollars to buy a pound, so the dollar price of the pound falls. This situation is also described as the dollar is stronger in the foreign exchange market, the pound has depreciated versus the dollar, and the pound is weaker in the foreign exchange market.

10. What is a depreciation of the Thai baht relative to the Malaysian ringgit? What happens to the baht price of the ringgit in this situation?

Answer: A depreciation of the Thai baht relative to the Malaysian ringgit means that it will take more baht to buy one ringgit. Thus, the baht price of the ringgit is now higher after the depreciation of the baht.

PROBLEMS

1. Mississippi Mud Pies, Inc. needs to buy 1,000,000 Swiss francs (CHF) to pay its Swiss chocolate supplier. Its banker quotes bid–ask rates of CHF1.3990–1.4000/USD. What will be the dollar cost of the CHF1,000,000?

Answer: The bank's bid rate is CHF1.3990/$. That is the price at which the bank is willing to buy $1 in return for CHF1.3990. The bank sells dollars at its ask price CHF1.4000/$. Mississippi Mud Pies must sell dollars to the bank to buy CHF. Therefore, Mississippi Mud Pies will receive the bank's bid rate of CHF1.3990/$. The dollar cost of CHF1,000,000 is consequently

CHF 1,000,000 / CHF1.399/$ = $714,796

2. If the Japanese yen–U.S. dollar exchange rate is ¥104.30/$, and it takes 25.15 Thai bahts to purchase 1 dollar, what is the yen price of the baht?

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Answer: To prevent triangular arbitrage, the direct quote of the yen price of the baht (¥/THB) must equal the yen price of the dollar times the dollar price of the baht (which is the reciprocal of the baht price of the dollar):

¥104.30/$ × 1/(THB25.15/$) = ¥104.30/$ × $0.03976/THB = ¥ 4.1471/THB

3. As a foreign exchange trader, you see the following quotes for Canadian dollars (CAD), U.S. dollars (USD), and Mexican pesos (MXN):

USD0.7047/CAD MXN6.4390/CAD MXN8.7535/USD

Is there an arbitrage opportunity, and if so, how would you exploit it?

Answer: The direct quote for the cross-rate of MXN6.4390/CAD should equal the implied cross-rate using the dollar as an intermediary currency; otherwise there exists a triangular arbitrage opportunity. The indirect cross rate is

MXN8.7535/USD ×USD0.7047/CAD = MXN6.1686/CAD

This indirect cross rate is less than the direct quote so there is an arbitrage opportunity to exploit between the three currencies. In this situation, buying the CAD with MXN by first buying USD with MXN and then buying the CAD with the USD and finally selling that amount of CAD directly for MXN would make a profit because we would be buying the CAD at a low MXN price and selling the CAD at a high MXN price.

4. The Mexican peso has weakened considerably relative to the dollar, and you are trying to decide whether this is a good time to invest in Mexico. Suppose the current exchange rate of the Mexican peso relative to the U.S. dollar is MXN9.5/USD. Your investment advisor at Goldman Sachs argues that the peso will lose 15% of its value relative to the dollar over the next year. What is Goldman Sachs's forecast of the exchange rate in 1 year?

Answer: One way to think of this is to say that the investment advisor is referring to the fact that the Mexican peso price of the dollar will be 15% higher next year. In this case, the forecast of the MXN/USD exchange rate in year 1

MXN9.5/USD × 1.15 = MXN 10.925/USD

A 15% loss of value of the Mexican peso versus the U.S. dollar technically means that dollar price of the peso is 15% lower. We know that the current USD price of the peso is

1 / (MXN9.5/USD) = USD0.105263/MXN

If this exchange rate falls by 15%, the new exchange rate will be

0.85 × USD0.105263/MXN = USD0.089474/MNX

In this case the forecast for the future exchange rate measured in pesos per dollar is

1 / (USD0.089474/MXN) = MXN11.1765/USD

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The difference arises because the simple percentage change in the exchange rate depends on how the exchange rate is quoted.

5. Deutsche Bank quotes bid–ask rates of $1.3005/€ - $1.3007/€ and ¥104.30 - 104.40/$. What would be Deutsche Bank's direct asking price of yen per euro?

Answer: The direct asking price of yen per euro (¥/€) is the amount of yen that the bank charges someone who is buying euros with yen. The bank would want this to be the same as the price at which it sells dollars for yen (the bank's ask price) times the price at which it sells euros for dollars (also the bank's ask price). Thus, the asking price of yen per euro should be

$$(¥104.40/\$) \times (\$1.3007/€) = ¥135.79/€$$

6. Alumina Limited of Australia has called Mitsubishi UFJ Financial Group to get its opinion about the Japanese yen–Australian dollar exchange rate. The current rate is ¥67.72/A$, and Mitsubishi thinks the Australian dollar will weaken by 5% over the next year. What is Mitsubishi UFJ's forecast of the future exchange rate?

Answer: If the Australian dollar weakens by 5% over the next year, it will take 5% fewer Japanese yen to purchase the Australian dollar. Thus, the forecast is

$$¥67.72/A\$ \times (1 - 0.05) = ¥64.334/A\$$$

7. Go to www.fxstreet.com, find the "Live Charts Window," and plot the exchange rate of the dollar vs. the euro with a "candle stick" high-low chart at 5 minute intervals for one day, daily intervals for one month, and weekly intervals for one year. Now, cover the units and ask a classmate to identify the different graphs. Are you surprised?

Answer: The Web site, fxstreet.com, provides some interesting ways to look at the data. The point of this exercise is that the dynamics of exchange rates look quite similar at the different intervals. The eye easily sees "trends" and other "reversals." These are often quite difficult to detect with statistical analysis, and in real time one never knows when the "trend" will stop.

8. **Pick 3 currencies, and go to www.oanda.com to get their current bilateral exchange rates. Is there an arbitrage opportunity?**

Answer: Oanda is an excellent source of high quality data. When we checked prices, they all satisfied the no arbitrage requirement.

9. Go to the CLS Bank web site, www.cls-group.com, and read about In/Out Swaps. How do they help participants manage their risks?

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Answer: Here is the quote from the Web site:

The In/Out Swap service is an additional liquidity management tool which helps financial institutions manage intraday liquidity effectively.

How It Works

The In/Out Swap is designed to reduce the payment obligations to CLS and to mitigate liquidity pressures. An In/Out Swap is an intraday swap consisting of two equal and opposite FX transactions that are agreed as an intraday swap.

One of the “legs” is settled inside CLS in order to reduce each Settlement Member’s net position in the two relevant currencies. The other “leg” is settled outside CLS.

Benefits

The combined effect of these two transactions is a reduction in the intraday funding requirements of the two Settlement Members, while leaving the institutions’ overall FX positions unchanged. On average, In/Out Swaps reduce payment obligations in CLS by 75%, which results in a funding requirement in CLS of less than 1% of the total gross settlement value.

As In/Out Swaps reduce these "in-CLS" cash positions as well as the corresponding liquidity positions outside of CLS, Members can more easily manage liquidity flows for their non-CLS needs, as well as in the CLS system.

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