Chapter 2

The Foreign Exchange Market

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?

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?

Answer:

\[
¥104.30/$ \times \frac{1}{(THB25.15/$)} = ¥104.30/$ \times \frac{0.03976/THB}{1} = ¥4.1471/THB
\]

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 \times 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:*

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

\[
0.85 \times USD0.105263/MXN = USD0.089474/MNX
\]

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

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

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:*

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

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

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