Foreign Currency Speculation

Hans is a currency speculator. He is willing to risk money based on his view of currencies and he may do so in the spot, forward or options market.

Assume Hans has $100,000 and he believes that the six month spot rate for Swiss francs will be $0.6000/SFr.

The current spot price for Swiss francs is $0.5851/SFr.

Speculating in the Spot Market

Use the \$100,000 to purchase Swiss francs at the rate of \$0.5851/SFr, which gives SFr170,910.96.

Hold the francs indefinitely (no commitment)

When target rate is reached, sell the SFr170,910.96 for \$0.6000/SFr.

Profit: $170,910.96 \times (0.6000 - 0.5851) = \$2,546.57$ ignoring interest and opportunity costs.

Speculating in the Forward Market

The six-month forward quote is \$0.5760/SFr.

Buy a contract for \$100,000 (no cash outlay initially).

At the contract maturity, $\frac{100{,}000}{0.5760} = \text{SFr}173,611.11$ are received and immediately sold for sold for \$0.6000/SFr, for a profit of

$$\frac{100,000}{0.5760} \times 0.6000 \; - \; 100,000 \; = \; \$4,166.67 \; .$$

Speculating in the Options Market

Hans could buy the August call on francs at a strike price of $58\frac{1}{2}$ (\$0.5850/SFr) at a premium of 0.50 of \$0.0050/SFr.

If spot rate is below strike price, the option won't be exercised and Hans loses $62,500 \times 0.005 = \$312.50$ per option.

If spot rate is above $58\frac{1}{2}$, the option will be exercised and Hans' profit will be

$$62,500 \times (\text{Spot rate} - 0.5850 - 0.0050) = 62,500 \times (\text{Spot rate} - 0.5900)$$

per option.

Speculating in the Options Market

Hans could **write a call option**, hoping that it won't be exercised. Let S denote the spot price at maturity date, let X denote the the option's strike price, and let C denote the call price, all prices in \$/SFr.

In this case, Hans' profit in \$/SFr is

$$\pi_w = \begin{cases} C & \text{if } S \leq X, \\ C - (S - X) & \text{if } S > X. \end{cases}$$

Speculating in the Options Market

Hans could **buy a put option**, expecting a drop in the currency price. Let S denote the spot price at maturity date, let X denote the the option's strike price, and let P denote the call price, all prices in $/SFr. If the spot is greater than X, the option won't be exercised.

In this case, Hans' profit in $/SFr is

$$\pi_w = \begin{cases} X - S - P & \text{if } S \leq X, \\ -P & \text{if } S > X. \end{cases}$$

Speculating in the Options Market

Hans could **write a put option**, hoping that it won't be exercised. Let S denote the spot price at maturity date, let X denote the the option's strike price, and let P denote the call price, all prices in \$/SFr. If the spot is greater than X, the option won't be exercised.

In this case, Hans' profit in \$/SFr is

$$\pi_w = \begin{cases} P - (X - S) & \text{if } S \leq X, \\ P & \text{if } S > X. \end{cases}$$