

Suggested Answers**Problem 1**

Understand currency risk hedging

- 1) The forward contract enables you to exchange euro for US dollar at \$1.35 per euro. By buying the contract, you avoided the loss from dollar's appreciation of 11.11%, or $(1.35-1.2)/1.35$. So the money you saved for your company is the net of potential loss minus the cost of the forward contract, i.e., $\$10m \times 11.11\% - \$10m \times 0.005 = \$1,111,000 - \$5,000 = \$1,106,000$.
- 2) You locked in the exchange rate at \$1.20 per euro, but euro is traded at \$1.35 on 09/30, which means dollar has depreciated by 12.5%, or $(1.35-1.2)/1.2$. In this case, you lost money and the total loss is: $\$10m \times 12.5\% + \$10m \times 0.01 = \$1,250,000 + \$100,000 = \$1,350,000$ or \$1.35 million.
- 3) The lesson is that when exchange rate is extremely volatile, using currency forward contract may not eliminate currency risk completely. In the above case, Euro reversed its direction in a very dramatic way, and buying forward contract actually increased loss to the company. A better alternative is buy currency options, which give buyers the option not to execute the contract at a pre-fixed exchange rate, if the currency moves in the opposite direction as previously anticipated. For details, please read p.327 of the textbook.

Problem 2

Calculate Exchange Rate

- 1) The first three days of January were not trading days, so we begin our analysis on Jan. 4, when Yuan/dollar was at 6.8276 Yuan per dollar. On Sept. 30, the exchange rate moved to 6.6914. Obviously, Yuan has appreciated against US dollar during this period. The percentage of the appreciation is roughly: $(6.82-6.69)/6.82 = 1.9\%$.
- 2) On Jan. 4, Euro/Dollar was traded at 0.69358 euro per dollar, and on Sept. 30, the rate was at 0.73526. So euro has depreciated against US dollar, by roughly $(0.74-0.69)/0.69 = 7.2\%$.
- 3) From 1) we know Yuan has appreciated 1.9% against US dollar. From 2), we know euro has depreciated 7.2% against US dollar, so Yuan must have appreciated against euro by roughly $1.9\% + 7.2\% = 9.1\%$.
- 4) Since Danish Krone is pegged to the Euro, Yuan must have also appreciated against DKK by 9.1% during the same period. However, the same air ticket may still cost the same because the ticket price was originally quoted in Danish currency. But if the ticket price was quoted in Yuan, then this Danish business man may end up paying 9.1% more than before. Of course, in reality, where the airline is headquartered also matters because it will determine which currency air ticket will be quoted in.