MIT Sloan School of Management

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E52-435

Finance Theory 15.415
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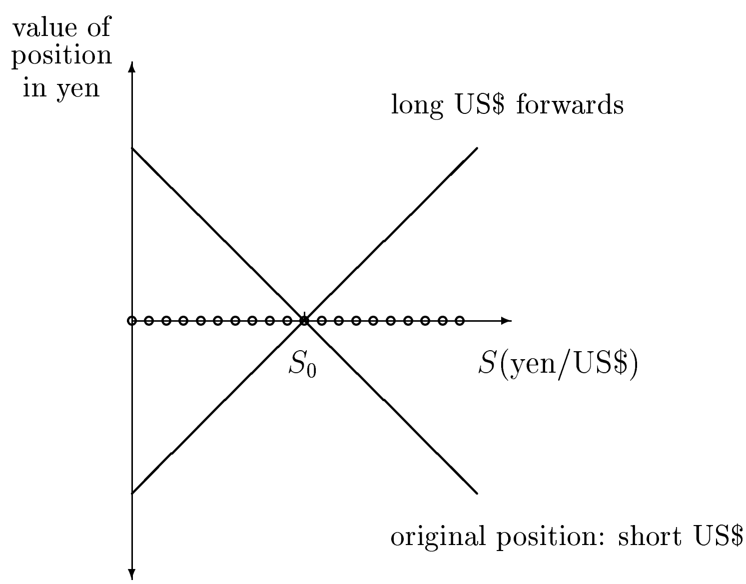
Solution to Assignment 4: Forwards and Futures

(not to be handed in)

1. Kashima Oil

(a) Kashima is an importer of oil, which is priced in US dollars. Assuming that the dollar price of oil remains constant, the yen cost of oil purchases increases as US dollar appreciates against yen. Thus, Kashima's natural position is short in US dollars. To hedge this position, Kashima should go long forward US dollars.

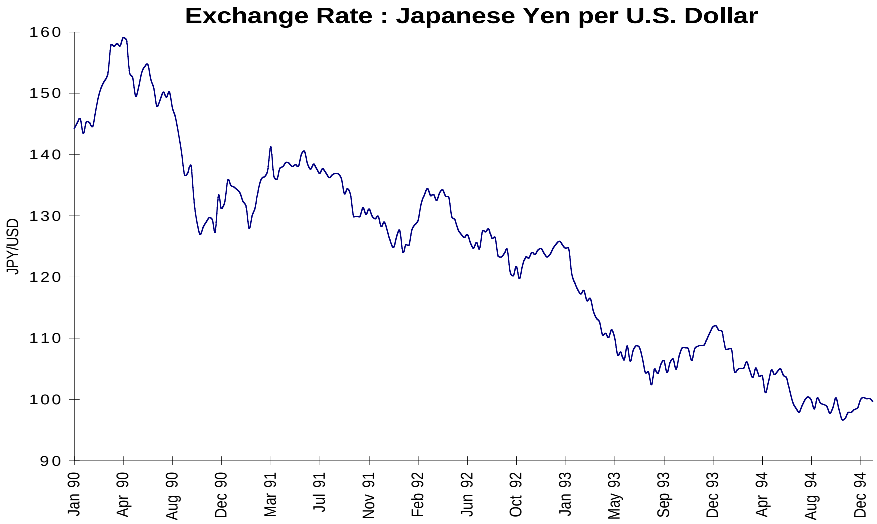
(b) Kashima's strategy was to go long forward US dollars. Thus, it was following the correct hedging strategy—in terms of buying US dollars forward. This is shown in the figure below.



Thus, as the US$ depreciates (see figure below) the losses on the forward should be offset by the gains from paying lower yen cost on the oil purchase.

(c) If Kashima had bought US$ forwards against future purchases of oil, then it did not really suffer a loss. As the figure above shows, losses on forwards were offset by gains on the purchase of oil (due to lower yen cost of oil compared to the original yen cost).

It is not mentioned verly clearly in the article, but Kashima actually bought more forwards than it needed, thus, taking a speculative position in dollars. Obviously, losses on these overly-long forwards were not offset by oil purchases. This was the true source Kashima's losses.



Source: Harris Bank