

## CHAPTER 34

### Solved Problems

**P.34.19** You are required to fill in the missing figures and complete the table.

<i>Currencies</i>	<i>US \$</i>	<i>POUND £</i>	<i>Canadian</i>	<i>YEN</i>	<i>EURO</i>
1 USD	1.0	0.6161	1.5259	—	0.9287
1 POUND	—	1.0	—	—	—
1 CANADIAN DOLLAR	—	—	1.0	—	—
1 YEN	—	—	—	1.0	—
1 EURO	—	—	—	—	1.0

### Solution

Determination of equivalent exchange rates

<i>Currencies</i>	<i>US \$</i>	<i>POUND £</i>	<i>Canadian \$</i>	<i>YEN ¥</i>	<i>EURO</i>
1 US \$	1.0000	0.6161	1.5259	118.08	0.9287
1 POUND	1/0.6161 <sup>1</sup> = 1.6231	1.0000	1.5259/0.6161 = 2.4767 <sup>2</sup>	118.08/0.6161 = 191.6556 <sup>3</sup>	0.9287/0.6161 = 1.5074 <sup>4</sup>
1 Canadian Dollar	1/1.5259 = 0.6553	0.6161/1.5259 = 0.4037	1.0000	118.08/1.5259 = 77.3838	0.9287/1.5259 = 0.6086
1 YEN	1/118.08 = 0.0085	0.6161/118.08 = 0.0052	1.5259/118.08 = 0.0129	1.0000	0.9287/118.08 = 0.0078
1 EURO	1/0.9287 = 1.0767	0.6161/0.9287 = 0.6634	1.5259/0.9287 = 1.6430	118.08/0.9287 = 127.145	1.000

### Working Notes

- Since 1 US \$ is equivalent to £0.6161, £1 = 1/0.6161\$ = US \$1.6231.
- 1 US \$ = 1.5259 Canadian \$; therefore £1 will be = 1.5259/0.6161 = 2.4767.
- £0.6161 = 118.08; therefore £1 = 118.08/0.6161 = 191.6556.
- £0.6161 = \*\*0.9287; therefore £1 = 0.9287/0.6161 = 1.5074.

This equivalence procedure has been followed in determining other missing figures.

**P.34.20** In 1994 a foreign institutional investor (FII) invested US \$1 million in the Indian stock market. The rupee return from the Indian stock market since 1994 has been 16 per cent as dividend income. However, stock prices have come down by 10 per cent since 1994. The currency rate at the time of FII purchase in 1994 was Rs 31/\$. If FII sells its holding today and the current currency rate is Rs 48/\$, what is the loss/profit to the FII in dollar terms?

**Solution** FII investment in rupee terms = \$10,00,000 × Rs 31 = Rs 3,10,00,000

Dividend income is Rs 3,10,00,000 × 16/100 = Rs 49,60,000

Capital loss due to decrease in stock prices is Rs 3,10,00,000 × 10/100 = Rs 31,00,000

So the current value of the portfolio is (Rs 3,10,00,000 + Rs 49,60,000 – Rs 31,00,000) = Rs 3,28,60,000.

If the FII sells his portfolio now, it will fetch him Rs 3,28,60,000. The value in dollar terms will be Rs 3,28,60,000 × 1/48 = \$6,84,583. Thus, FII suffers a loss of US \$3,15,417, i.e., (US \$10,00,000 – US \$6,84,583).

### Review Questions

**34.19** An American importer has purchased goods worth euro 15,00,000. Payments are to be made after 6 months. The spot rate of Euro is US \$1.1000/. The American importer expects depreciation of the dollar against the euro in the coming months. A New York bank gives the 6 month forward rate as US \$1.1500/.

If the American importer makes use of the forward rate to hedge its currency risk, what is its loss or profit under following circumstances.

- Spot price of euro after 6 months is US \$1.1000/
- Spot price of euro after 6 months is US \$1.2000/

(c) Spot price of euro after 6 month is US \$1.0950/

**34.20** A forex trader wants to earn arbitrage gain. He receives the following data and quotes from forex and the money market.

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Spot rate of US \$	:	Rs 48.5/\$
6 month forward rate of US \$	:	Rs 48.90/\$
Annualised interest on US 6 month treasury bill	:	2.5%
Annualised interest on Indian 6 month treasury bill	:	6.0%

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What are the transactions the trader will execute to receive arbitrage gain?

### Answers

**34.19** (a) Loss € 75000, (b) Gain € 75000, (c) Loss € 75000.

**34.20** (i) American importer borrows US \$10 million @ 2.5 per cent.

(ii) Converts US \$ into rupees.

(iii) Lends rupees in Indian money market for 6 months.

(iv) While lending, he enters into a forward contract to sell Rs at the end of 6 months.

(v) He returns US \$ with interest and gains US \$90,746.