

QUESTION - 03

On January 28, 2013 an importer customer requested a Bank to remit Singapore Dollar (SGD) 2,500,000 under an irrevocable Letter of Credit (LC). However, due to unavoidable factors, the Bank could effect the remittances only on February 4, 2013. The inter-bank market rates were as follows:

	January 28, 2013	February 4, 2013
US\$ 1 = ₹	₹ 45.85/45.90	₹ 45.91/45.97
GBP £ 1 = US\$	US\$ 1.7840/1.7850	US\$ 1.7765/1.7775
GBP £ 1 = SGD	SGD 3.1575/3.1590	SGD 3.1380/3.1390

The Bank wishes to retain an exchange margin of 0.125%

Required:

How much does the customer stand to gain or lose due to the delay?

(Note: Calculate the rate in multiples of 0.0001)

(Study Material, PM & Exam November - 2011)

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28/1/2013

₹/SGD

• Buy \$ from ₹
₹/\$ = 45.90

• Buy £ from \$
\$/£ = 1.7850

• Buy SGD from £
SGD/£ = 3.1575

$$\begin{aligned}\text{₹/SGD} &= \frac{\text{₹}}{\text{\$}} \times \frac{\text{\$}}{\text{£}} \times \frac{\text{£}}{\text{SGD}} \\ &= 45.90 \times 1.7850 \times 3.1575\end{aligned}$$

$$= \underline{\underline{₹25.9482}} + 0.125\% = 25.9806$$

$$\text{Loss due to the delay} = (25.9806 - 26.0719) \times 2500000 = ₹228250$$

4/2/2013

₹/SGD

$$45.97 \times 1.7775 \times \frac{1}{3.1380}$$

$$= 26.0394 + 0.125\%$$

$$= 26.0719$$

Eg

Suppose \$ appreciated
by 5% Calculate

Return for Indian Investor

Spot Rate \$1 = ₹80

Bond
\$105 × 80 = ₹8400

Ram

\$114 × 84 = ₹9576

$$\% = \frac{9576 - 8400}{8400} \times 100 = 14\%$$

$$\text{or } [(1.0857)(1.05) - 1] = 14\%$$

USA

Bond = \$105

Investment for 1 YEAR

After 1 YEAR =

Coupon = \$7

Redeemable Value = \$107

Calculate % of Return for US Investor

$$\text{HPR} = \frac{(\$107 - \$105) + \$7}{\$105} \times 100 = 8.57\%$$

QUESTION - 05

\$5000

\$5250
\$350

The price of a bond just before a year of maturity is \$ 5,000. Its redemption value is \$ 5,250 at the end of the said period. Interest is \$ 350 p.a. The Dollar appreciates by 2% during the said period. Calculate the rate of return.

(Study Material, PM & Exam May - 2012)

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US Investor

$$\text{Return} = \frac{\$5250 + 350 - \$5000}{\$5000} \times 100$$
$$= 12\% \text{ p.a.}$$

Other than US Investor

$$\text{Return} = [(1.12)(1.02) - 1] \times 100 = 14.24\%$$

2. Spot Market Arbitrage

Suppose price of \$

In India = ₹/\$ 80.50

In USA = ₹/\$ 80.90

Buy \$ from India at ₹ 80.50 &

sell in USA at ₹ 80.90

Arbitrage Gain = (₹ 80.90 - 80.50)
= ₹ 0.40 per \$

EXAMPLE - 29

₹/\$ = 60.50/60.75 India

₹/\$ = 60.90/61.25 USA

Calculate Arbitrage Gain

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Buy \$ from India at ₹ 60.75
& sell in USA at ₹ 60.90
Gain = 0.15 per \$

EXAMPLE – 30

$$\$/\pounds = \underline{1.5025}/1.5175 \quad \text{US}$$

$$\$/\pounds = 1.5075/\underline{1.5195} \quad \text{UK}$$

Calculate Arbitrage Gain

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~~UK to US~~

No Arbitrage

EXAMPLE - 31 (Imp)

In USA

$$\text{₹/\$} = 60$$

$$\text{\$/£} = 1.50$$

- i. On the basis of above exchange rate, what should be price of £ in India. ₹/£
- ii. If £ is quoted in India at ₹ 80, calculate arbitrage.

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① price of £ in India (should be)

$$\text{₹/\$} = 60$$

$$\text{\$/£} = 1.50$$

$$\text{₹/£} = 60 \times 1.50 = ₹ 90$$

② Arbitrage

If Actual Rate of £ in India ₹ 80 then buy £ from India at ₹ 80 & sell in USA at ₹ 90.

EXAMPLE - 32

$$\begin{array}{l} \text{₹/\$} = ₹ 60.50 \text{ INDIA} \\ \text{\$/£} = \$ 1.5045 \text{ USA} \\ \text{£/₹} = \underline{\underline{£ 0.0125}} \text{ UK} \end{array} \quad \text{£/₹} \quad \frac{1}{1.5045} \times \frac{1}{60.50} = \underline{\underline{0.01099}} \text{ £/₹}$$

If you have ₹1,00,000 calculate arbitrage.

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Following steps are applied for Arbitrage

1. Buy £ from UK $(₹ 100000 \times 0.0125) = £ 1250$
2. Buy \$ from US $(£ 1250 \times 1.5045) = \$ 1880.625$
3. Sell \$ in India $(\$ 1880.625 \times 60.50) = ₹ 113778$

$$\begin{aligned} \text{Arbitrage Gain} &= ₹ 113778 - ₹ 100000 \\ &= ₹ 13778 \end{aligned}$$

EXAMPLE - 33

$$\text{₹}/\$ = \underline{60.50}/60.75 \quad \text{INDIA} \quad \$$$

$$\$/\text{£} = \underline{1.5075}/1.5125 \quad \text{USA} \quad \text{£}$$

$$\text{£}/\text{₹} = \underline{0.0125}/0.0135 \quad \text{UK}$$

If you have ₹1,00,000 calculate arbitrage gain.

Arbitrage process

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- Buy £ from UK ($\text{₹ } 1,00,000 \times 0.0125$) = £1250
- Buy \$ from USA ($\text{£ } 1250 \times 1.5075$) = \$1884.375
- Sell \$ in India ($\text{\$ } 1884.375 \times 60.50$) = ₹114005

$$\text{Gain} = 114005 - 100000 = 14005$$

QUESTION - 06

On the same date that the DM spot rate was quoted at \$0.40 in New York, the price of the pound Sterling was quoted at \$ 1.80:

- ✓ (i) What would you expect the price of the Pound to be Germany?
- ✓ (ii) If the Pound was quoted in Frankfurt at DM 4.40/Pound, what would you do to profit from situation.

$$\text{NY } \$/\text{DM} = \$0.40$$

$$.\$/\text{£} = \$1.80$$

$$\text{DM}/\text{£} = \frac{1}{\$0.40} \times 1.80 = 4.50$$

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Arbitrage

Buy £ from Frankfurt
at DM 4.40 & sell in
NY at DM 4.50

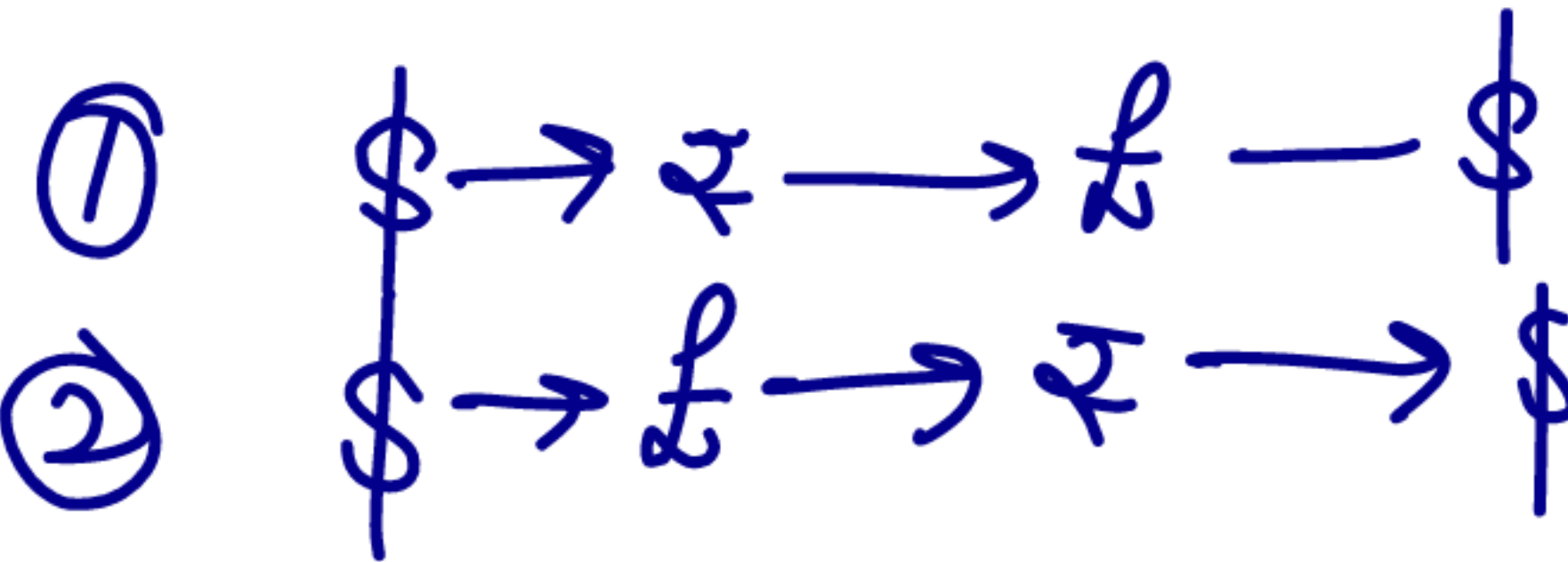
$$\text{Arbitrage } (4.50 - 4.40) \\ = \text{DM } 0.10 \text{ per £}$$

QUESTION - 07

Followings are the spot exchange rates quoted at three different forex markets:

USD/INR	48.30 in Mumbai	₹/\$
GBP/INR	77.52 in London	₹/£
GBP/USD	1.6231 in New York	\$/£

The arbitrageur has USD 1,00,00,000. Assuming that there are no transaction costs, explain whether there is any arbitrage gain possible from the quoted spot exchange rates.



(Study Material & PM)

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\$1000000

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