QUESTION – 42

Spot rate 1 US $ = ₹ 48.0123

180 days Forward rate for 1 US $ = ₹ 48.8190

Annualized interest rate for 6 months – Rupee = 12%

Annualized interest rate for 6 months – US $ = 8%

Is there any arbitrage possibility? If yes how an arbitrageur can take advantage of the situation, if he is willing to borrow ₹ 40,00,000 or US $83,312.

H.W (H.W Copy)

(Study Material & PM)

(Page No. 65)

QUESTION – 43

Given the following information:

Exchange rate – Canadian dollar 0.665 per DM (spot) C$/DM 0.665

Canadian dollar 0.670 per DM (3 months) C$/DM 0.670

Interest rates – DM 7% p.a.

Canadian Dollar – 9% p.a.

What operations would be carried out to take the possible arbitrage gains?

(Study Material, PM & Exam May - 2011)

(Page No. 66)

Premium in DM

$$\text{premium} = \frac{F-S}{S} \times 100 \times \frac{12}{3}$$

$$= \frac{0.670 - 0.665}{0.665} \times 100 \times \frac{12}{3}$$

$$= 3\% \text{ p.a.}$$

Negative Int. Rate difference

Int Rate diff = 9 − 7 = 2%.

Action

Since premium in DM is more than Int Rate difference, hence Invest in DM & Borrow from C$

Process [Assume Can $1000]

Today

- Borrow Can $1000 @ 9% P.A. for 3 Months
- Convert Can $ into DM at SR $\frac{\text{Can \$1000}}{0.665} = \text{DM } 1503.76$
- Invest DM 1503.76 @ 7% P.A. for 3 Months

After 3 Months

- Cash Inflows in DM $(1503.76 \times 1.0175) = 1530.07$
- Convert DM 1530.07 into Can $ at FR

$$\text{Cash Inflow (Can \$)} = (1530.07 \times 0.670) = \text{Can \$1025.15}$$

$$\text{Cash outflows} = \text{Can \$1000} \times 1.0225 = \text{Can \$1022.50}$$

$$\text{Arbitrage Gain} = \text{Can \$2.65}$$

$$\text{Arbitrage gain (DM)} = \frac{\text{Can \$2.65}}{0.670} = \text{DM } 3.955$$

QUESTION – 44

Mercy is a Forex Dealer with XYZ Bank. She notices following information relating to Canadian Dollar (CAD) and German Deutschmark (DEM):

Exchange rate – CAD 0.775 per DEM (Spot)

CAD 0.780 per DEM (3 months)

Interest rates – DEM 7% p.a.

CAD 9% p.a.

(i) Assuming that there is no transaction cost determine does the Interest Rate Parity holds in above quotations.

(ii) If yes, then explain the steps that would be required to make an arbitrage profit if Mercy is authorized to work with CAD 1 Million for the same purpose. Also determine the profit that would be made in CAD.

Note: Ignore the decimal points in the amounts.

(MTP: Oct - 2019)

(Page No. 67)

QUESTION – 45

Given the following information:

Exchange rate – Canadian dollar 0.666 per DM (Spot)

Canadian dollar 0.0671 per DM (3 Months)

Interest rates – DM 7.5% p.a.

Canadian Dollar – 9.5% p.a.

To take the possible arbitrage gains, what operation would be carried out?

(Exam May – 2016 & 2018)

(Page No. 69)

QUESTION – 46

Given the following information:

Exchange rate – Canadian Dollar 0.666 per DM (Spot)

Canadian Dollar 0.671 per DM (3 Months)

Interest rates – DM 8% p.a.

Canadian Dollar 10% p.a.

What operations would be carried out to earn the possible arbitrage gains?

(Exam November – 2010)

(Page No. 70)

QUESTION – 48

Spot rate 1 US$ = ₹ 68.50 ₹/$

USD premium on a six month forward is 3% The annualized interest in US is 4% and 9% in India.

Is there any arbitrage possibility? If yes, how a trader can take advantage of the situation if he is willing to borrow USD 3 million. or Equivalent ₹

(Exam November 2018)

(Page No. 73)

6 months FR

6 Months FR = 68.50 × 1.03

= ₹ 70.555

premium in $ = $3 \times \frac{12}{6}$

= 6% p.a.

Negative Intt Rate difference

= 9 - 4 = 5% p.a.

Invest in US & Borrow from India

Arbitrage process

Today

- Borrow $3000000 equivalent ₹ ($3000000 × 68.50) ₹ 205500000 from India @ 9% p.a. for 6 months.
- Convert ₹ into $ at SR i.e. $3000000
- Invest $3000000 in US @ 4% p.a. for 6 Months

After 6 Months.

Cash Inflows in $ = $3000000 (1.02) = $3060000

Convert $ into ₹ at 6 Months FR

Cash Inflows in ₹ ($3060000 × 70.555) = 215898300

Cash outflows (205500000 (1.043) = 214747500

Arbitrage Gain = ₹ 1150800

$ 16310.68

QUESTION – 49

Following are the rates quoted at Bombay for British pound:

BP/₹ ₹/£	52.60/70	Interest Rates	India	London
3 Months forward	20/70	3 Months	8%	5%
6 Months forward	50/75	6 Months	10%	8%

Verify whether there is any scope for covered interest arbitrage if you borrow rupees.

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H-10

p.a.

3 Months

- Borrow ₹ 100000 from India @ 8% p.a. for 3 months
- Convert ₹ into £ at SR

  ₹/£ 52.70

  $\frac{₹\ 100000}{52.70}$ = £ 1897.53
- Invest £ 1897.53 in London @ 5% p.a. for 3 months.

After 3 Months

Cash Inflows in £ $(1897.53 \times 1.0125) = £1921.25$

Convert £ into ₹ at 3 months FR

₹/£ = ₹52.80

Cash Inflows in ₹ = $(1921.25 \times 52.80) = ₹101442$

Cash outflows in ₹ = $(100000 \times 1.02) = ₹102000$

Loss ₹558

There is no possibility of Arbitrage if Rupees Borrow.

QUESTION – 47 (Monday)

(i) Interest rates for 3 months in USA and Canada are as follows:

Invest

Currency	Borrow	~~Interest~~
US $	4%	2.5%
Canadian $	4.5%	3.5 %

(ii) Can $/ US $ spot 1.235 ---- 1.240 C$/$

3 months forward 1.25 5---- 1.260

Advice, the currency in which borrowing and lending for 3 months needs to be done for the US company. Take 3 months = 90/360 days.

(Exam Jan-2021)

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