

FOREX CLASS 22

CLASS WORK COVERAGE

To streamline our learning process, I've categorized the questions we'll tackle in class into four distinct groups:

1. **Classic:** *These questions are exactly as presented in your book, providing a familiar foundation.*
2. **Transformed:** *Here, we've converted book questions into multiple-choice format to enhance your analytical skills.*
3. **Adapted:** *These are similar to book questions but with altered numbers or names, presented as multiple-choice questions for varied practice.*
4. **Original:** *These are entirely new questions not found in your book, designed to challenge and expand your understanding.*

This structure will help us navigate through a range of problems, ensuring a comprehensive grasp of the material. Looking forward to our next session!

Q. No	Type	Book	Page No.
Extra Q	Classic	CW ANS BOOK	73
60	Classic	CW Q BOOK	24
72	Classic	CW Q BOOK	29
63	Classic	CW Q BOOK	25

PART IV: INTERNATIONAL PARITY CONDITIONS
Topic 24 PPP and IFE
HW ANS BOOK PAGE 73
EXTRA QUESTION

A US investor chose to invest in Sensex for a period of one year. The relevant information is given below.

Size of investment (\$)	20,00,000
Spot rate 1 year ago (₹/\$)	42.50/60
Spot rate now (₹/\$)	43.85/90
Sensex 1 year ago	3,256
Sensex now	3,765
Inflation in US	5%
Inflation in India	9%

- Compute the nominal rate of return to the US investor.
- Compute the real depreciation / appreciation of Rupee.
- What should be the exchange rate if relevant purchasing power parity holds good?
- What will be the real return to an Indian investor in Sensex?

(Source: ICAI)

ANSWER: HW ANS BOOK PAGE 74
i. Nominal rate of return to the US investor

Size of investment (\$)	20,00,000
Size of investment (₹) (\$ 20,00,000 x 42.50)	8,50,00,000
Sensex at T_0	3,256
No. of units of Sensex that can be purchased at T_0 (₹ 8,50,00,000/3,256)	26,105
Sensex at T_1	3,765
Sale of Sensex (26,105 x 3,765)	9,82,85,325
US\$ at T_1	₹ 43.90
Equivalent Amount in US\$	22,38,846
Gain in US\$	2,38,846
Nominal rate to US investor	11.94%

ii. Real Appreciation/Depreciation of Rupee

$$\text{Real Exchange Rate (Buying)} = 43.85 \frac{(1+0.05)}{(1+0.09)} = 42.24$$

$$\text{Real Appreciation of ₹} = \frac{42.50 - 42.24}{42.50} \times 100 = 0.61\%$$

iii. Exchange rate if relevant purchasing power parity holds

$$\text{Buying Rate} = 42.50 \frac{(1+0.09)}{(1+0.05)} = 44.12$$

$$\text{Selling rate} = 42.60 \frac{(1+0.09)}{(1+0.05)} = 44.22$$

$$\text{Exchange rate} = 44.12/44.22$$

iv. Real return to Indian Investor in Sensex

$$\text{Nominal Return} = \frac{3,765 - 3,256}{3,256} \times 100 = 15.63\%$$

$$\text{Real return} = \frac{(1.1563)}{(1.09)} - 1 = 0.0608 \text{ or } 6.08\%$$

Topic 19 CURRENCY OF INVESTMENT

Question 60: SSEI CW Book Page No.24

A foreign institutional investor invested in unit is of a mutual fund in India for a period of one year. The following information is available regarding the investment and other economic variables:

Value of investment	₹ 1000 million
NAV at the time of investment	₹ 10.00
NAV at the end of investment horizon	₹ 11.00
Dividend received per unit after 6 months	₹ 1.20
₹/ \$ rate at the time of investment	44.50 / 44.60
₹/ \$ rate at the end of investment horizon	46.70 / 46.85
Reinvestment rate during the period	10%
Additional Information	
Inflation rate : US - 2%	
India - 6%	

You are required to

- Calculate the nominal return to FII.
- Calculate the real return to FII.
- Calculate the real return to an Indian investor who invested in the same fund for the same period.

(Source: ICAI)

ANSWER:

- a. Step: 1 US FII sold \$x million spot at 44.50 getting ₹ 1,000 m.
 $x \times 44.50 = 1000$
 $x = 1000 / 44.50 = \$22.4719\text{m}$
- Step: 2 Invest ₹ 1,000 in MF units getting = ₹ 1000/10 = 100 m units
- Step: 3 Dividend Received after 6 months = $100 \times 12 = ₹ 120 \text{ m}$
- Step: 4 Dividend Amt reinvested @ $10/2 = 5\%$ for 6m.
 So, F value of received dividend = ₹ 126 m
- Step: 5 FII sold 100 m units at the end of year at ₹ 11/unit getting ₹ 1100 m.
 Total amt. available = $1100 + 126 = ₹ 1226 \text{ m}$
- Step: 6 Buy \$ at year end @ 46.85 getting = $1226 / 46.85 = \$26.1686\text{m}$
- Step: 7 Expected return in \$ term = $\frac{\$26.1686\text{m} - \$22.4719\text{m}}{22.4719} \times 100 = 16.45\%$

b. Real Return

$$= \frac{1.1645}{1.02} - 1 = 14.17\%$$

c. Normal return for Indian Investor

$$= \frac{\text{DIV (after reinvestment)} + \text{Price Change}}{\text{Initial Price}} \times 100$$

$$= \frac{1.2 \times 1.05 + 11 - 10}{10} \times 100 = 22.6\%$$

$$\text{Real Return} = \frac{1.226}{1.06} - 1 = 15.66\%$$

Topic 24 PPP and IFE**Question 72: SSEI CW Book Page No.29**

The rate of inflation in India is 8% per annum and in the U.S.A. it is 4%. The current spot rate for USD in India is ₹ 46. What will be the expected rate after 1 year and after 4 years applying the Purchasing Power Parity Theory.

(Source: ICAI)

ANSWER:

The differential inflation is 4%. Hence the rate will keep changing adversely by 4% every year. Assuming that the change is reflected at the end of each year, the rates will be:

End of Year	₹	₹ /USD
1	₹ 46.00 x 1.04	47.84
2	₹ 47.84 x 1.04	49.75

3	₹ 49.75 x 1.04	51.74
4	₹ 51.74 x 1.04	53.81

Alternative Answer

End of Year	₹	₹ /USD
1	₹ 46.00 × $\frac{(1+0.08)}{(1+0.04)}$	47.77
2	₹ 47.77 × $\frac{(1+0.08)}{(1+0.04)}$	49.61
3	₹ 49.61 × $\frac{(1+0.08)}{(1+0.04)}$	51.52
4	₹ 51.52 × $\frac{(1+0.08)}{(1+0.04)}$	53.50

Topic 21 FC VS MMC

Question 63: SSEI CW Book Page No.25

Wenden Co is a Dutch-based company which has the following expected transactions.

One month: Expected receipt of	£2,40,000
One month: Expected payment of	£1,40,000
Three months: Expected receipts of	£3,00,000

The finance manager has collected the following information:

Spot rate (£ per €):	1.7820 ± 0.0002
One month forward rate (£ per €):	1.7829 ± 0.0003
Three months forward rate (£ per €):	1.7846 ± 0.0004

Money market rates for Wenden Co:

	Borrowing	Deposit
One year Euro interest rate:	4.9%	4.6
One year Sterling interest rate:	5.4%	5.1

Assume that it is now 1 April.

Required:

- Calculate the expected Euro receipts in one month and in three months using the forward market.
- Calculate the expected Euro receipts in three months using a money-market hedge and recommend whether a forward market hedge or a money market hedge should be used.

(Source: ICAI)

ANSWER:**a. Forward market evaluation**

Net receipt in 1 month = £2,40,000 – £1,40,000 = £1,00,000

WendenCo needs to sell Sterlings at an exchange rate of $(1.7829 + 0.0003) = £1.7832$ per €

Euro value of net receipt = $1,00,000 / 1.7832 = €56,079$

Receipt in 3 months = £3,00,000

Wenden Co needs to sell Sterlings at an exchange rate of $1.7846 + 0.0004 = £1.7850$ per €

Euro value of receipt in 3 months = $3,00,000 / 1.7850 = €1,68,067$

b. Evaluation of money-market hedge

Expected receipt after 3 months = £300,000

Sterling interest rate over three months = $5.4 / 4 = 1.35\%$

Sterlings to borrow now to have £300,000 liability

after 3 months = $300,000 / 1.0135 = £296,004$

Spot rate for selling Sterling = $1.7820 + 0.0002 = £1.7822$ per €

Euro deposit from borrowed Sterling at spot = $296,004 / 1.7822 = €166,089$

Euro interest rate over three months = $4.6 / 4 = 1.15\%$

Value in 3 months of Euro deposit = $166,089 \times 1.0115 = €167,999$

The forward market is marginally preferable to the money market hedge for the Sterling receipt expected after 3 months.