FOREX CLASS 1

Indian Investor —invest→ US Stock
$S_0 = ₹84.5/\$$
⇓
Tesla → \$120 per share

₹20 lakhs
⇓
\$23668.64 $\left(\frac{₹20 lakh}{84.5}\right)$

197.24 shares $\left(\frac{23668.64}{120}\right)$

Investment Horizon → 1 yr

Forecast : Expected Spot rate (S_1) = 88.725 (84.5×1.05)
⇓
\$ ↑ 5%

Expected stock Price = 135.6
⇓

$Rf_{US} = 5\%$
$MRP_{US} = (R_m - R_f)_{US} = 4\%$
β of Tesla = 2.

∴ CAPM = Telsa stock Return = $R_f + (R_m - R_f) \times \beta$
$= 5 + 4 \times 2$
$= 13\%$.
⇓

No dividend → Expected Price appreciation

∴ Expected stock Price = 120 × 1.13
= 135.6

Sell the share \$ proceeds = 197.24 × 135.6
= 26745.74 \$

Convert into ₹
∴ Expected ₹ inflow = 26745.74 × 88.725
= 23,73,016

∴ Expected Return to the Indian Investor in ₹ terms = 373016

∴ in % = $\frac{2373016 - 20,00,000}{20,00,000} \times 100$

= 18.65%

Analysis of this Return

(What is FC return, RFX, what is cross product, kaise pata hai?)

R_{DC} - domestic currency	R_{FC}	R_{FX} - exchange rate ka effect (5% appreciation hua hai)
⇓	⇓	⇓
18.65%	13%	5%

∴ $R_{DC} \cong R_{FC} + R_{FX}$

(factor × factor) − 1

$R_{DC} = [(1+R_{FC})(1+R_{FX})] - 1$ → 1$ invest kiya tha uska appreciation 5%.

= [Factor × Factor] − 1

(1$ invest kiya tha uska return 13%)

(100$ lagaye the to 113$ bn) gya or 113$ ko jb convert krne gye to $ ka bhav bhi badh gya 105$ ho gya, so 5% ka fayda 100$ pe nai hua 113$ pe hua hai

= $(1.13 \times 1.05) - 1$

= 18.65%

OR

$R_{DC} = R_{FC} + R_{FX} + R_{FX} \cdot R_{FC}$ (↑ cross product: 5% × 13 = .65 yha se a rha hai, byaz pe byaz compounding)

= 13 + 5 + 5% of 13

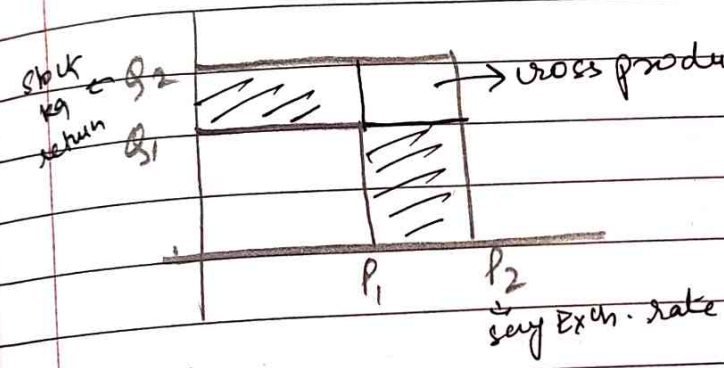
= 18.65%

DC → FC.

$$R_{DC} \equiv f\begin{bmatrix} R_{FC}^{+} \\ R_{FX}^{+} \end{bmatrix}$$

- 2 part me puche

- If they will ask Stock pe return & foreign currency pe return, then ₹3% 5.65% kar denge
- 3 part me
- If they ask R_{FC}, R_{FX} & cross product
  - R_{FC} ↓ 13%
  - R_{FX} ↓ 5%
  - cross product ↓ .65%



Q1. What is R_{DC} = 18.65%.

Q2. Break R_{DC} into 3 parts :-

- R_{FC} = 13%.
- R_{FX} = 5%.
- Cross Product = .65%

Q3. Break R_{DC} into 2 parts :-

- R_{FC} = 13%.
- R_{FX} = 5.65%.

CASE STUDY - 1 ×80$ = 16,00,000 invested   Vol-4 - Pg 49 Q1

$\frac{\$20,000}{500}$ = 40$ General Motor share price

Tata Motor | share price ↑ = $\frac{60}{400} \times 100$ = 15%

↑ by same % = 40×1.15
= 46$

Now, ER = $80 × 1.10 = $88

sold
500 × 46$ = 23,000
Reinvest
$88

= 20,24,000
− 16 lakh
424000 → Return % = $\frac{424k}{16L} \times 100$

= 26.5%

1. Rupee of lay in buying shares

c) 16,00,000

2. Stock price at end yr

(a) = 46

depreciation kam ... or appreciation me jada ata hai

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Date

CASE STUDY - 1

3) ER at end yr

b) ₹88/USD

4. how much recd in $ terms & INR terms by selling

a) $ 23000 and ₹ 20,24,000

5) ROI for investor & split into return on security, return on exchange rate & cross product.

$\therefore R_{DC} = 26.5\% \quad (1.15 \times 1.1)$

$\therefore R_{FC} = 15\%$

$\therefore R_{FX} = 10\%$

$\therefore R_{FC} \times R_{FX} = 15\% \text{ of } 10\% = 1.5\%$

a) 26.5% of total ROI, with 15% from security, 10% from exchange rate & 1.5% from cross product.

Q6. total return? if insted $ appreciating by 10%, it depreciates by 10%?

$\therefore 23000 \times 72 = 1656000 - 16L \times 10$

$= 3.5\%$

Or

d) 3.5%

$R_{DC} = (1.15 \times 0.9) - 1 = 3.5\%$

Vol 3 - Pg 64

not required

$1\$ = 80 \rightarrow 1₹ = \frac{1}{80}$

$1\$ = 88 \rightarrow 1₹ = \frac{1}{88}$

$\$\uparrow\% = \frac{88-80}{80} \times 100 = 10\%$

$\%\Delta ₹ = \frac{\frac{1}{88} - \frac{1}{80}}{\frac{1}{80}} \times 100$

$= \frac{\frac{80-88}{88 \times 80}}{\frac{1}{80}} \times 100$

$= \frac{-8}{88} \times 100$

$= -9.09\%$

Q. Case study 2

$R_{DC} = (factor \times factor) - 1$ (100 - 9.43) (100 - 1.95)

$= [(0.9057 \times .9805) - 1] \times 100$

$= -11.20\%$

100 pe 9.43% khoya to kitna bacha

7. If \$↑ by 10% against ₹ can we say that ₹ depreciated by 10% against \$?

S) No — approximately yes but technically no

jo appreciate hota hai → 9.09% ₹ ka depreciation

% high — Base → Base (appreciate)

% low (depreciate) → $\frac{10}{110} \times 100$

$= 9.09\%$

\$ app = 5% ; $\frac{5}{105} \times 100$

₹ dep = 4.76%

If 10% \$ ↓ toh ₹ ka appreciation ? $= \frac{10}{90} \times 100 = 11.11\%$

Case Study 2 Elon Musk (Vol 3 Pg 65)

28/4/2020 500 × 53 = 26500 \$ —76.8→ 20,35,2002

1/5/20 — sold @ 48 —500→ 24000 \$ ↓ } −228,000 lox

~~1/5/22 → 75.3 \$ × 24000 = 18,07,200~~ %

4/5/22 conver = −11.20% (RDC)

1. Initial cash outflow in Tesla = 20,35,200 (a) ⊗ Pg 9
(26500 × 76.8)

Summary of the above :-

1. Jab koi dusre country ke stock min paisa lagata hai... toh vo actually ek portfolio mein paisa laga raha hai.... → do cheeze me paisa laga raha hai
The portfolio comprising the stock and the currency
⊛
Uska expected return RDC & risk (σ → sd) depend karta hai on ———

- stock
- currency

⊛ This part belongs to "Portfolio Management".

2. Currency conversion :-

Spot 96.50 / £

To £5000 = ₹ 5000×96.5
= ₹ 482500

But ₹ 500000 → £ 5181.34

1 € → .4680£

Ex: Spot rate = £ 0.4680 per Euro

40,000 £ = € 40,000 / .4680

= €85,470.085

Ex: Spot C$ (price currency) 1.3220 per AU$ (base currency)

€ 0.9620 per US$ — 1 US$ ka rate hai or US$ ko hi convert kar rahe hai so × hoga

US$ 50,000 → € 50,000 × .9620

= €48100

& C$ 90,000 → AU$ 90,000 / 1.3220 = 68,078.67 AU$

GYAN

Exchange rate → It is the price of one currency (base currency) in terms of another. (price currency)

Jo amount convert karna hai.... Vo agar base currency ka hai toh unitary method lag jayega & ÷ [X]

Otherwise divide (÷)

Bond val / Δ in cap / Fed / Derivatives

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Ex: Mr. Allen from London wants to travel Europe & requires €75000. If spot rate is £ 0.4520/€, how much pound required ?

∴ 75000 × .4520 = 33900 £

Drive ko visit karna hai for question
Sec A 1st Sec B

250-280 hrs lagenge → Livewala

Case Study 2
(*) Pg 7

Q2. Total cash inflow in ₹ when sold

c) 18,07,200 (75.3 × 24000$)

Q3. % return (or loss) considering ₹ conversion rates ?

b) -11.20 %

Q4. % return on stock price of Tesla?

$53 \to 48 \to -\frac{5}{53} \times 100 = -9.43\%$

d) -9.43%

Q5. % return (loss) due to Δ in ER?

$78.6 \to 75.3 \quad \frac{3.3}{78.6} \times 100 = -1.95\%$

c) -1.95%

Q6. Split up

$R_{DL} = [(factor \times factor) - 1]$

$= [(.9057 \times .9805) - 1] \times 100$

$= -11.20\%$

Case Study → 3 - similar vol 3 pg 66 - Q2

Sam planning trip $8000 in A/C
wants to know how much need to borrow
to pay for exp in below country:-

i) Brazil : 10,000 BRL
ii) Australia : 4500 AUD
iii) UK : 3000 GBP

Ex Rate for each currency :-

i) BRL / USD : 0.20 - 1 USD = 0.20 BRL
ii) USD / AUD : 0.65
iii) USD / GBP : 1.35 - £ mehanga hota hai $ se

How much USD does SAM need to borrow?

i) Brazil = $\frac{10,000}{0.20}$ = 50,000
ii) Australia = 4500 × .65 = 2925
iii) UK = 3000 × 1.35 = 4050

$ 56,975
(-) 8000
$ 48,975 ✓