



INTEREST RATE RISK MANAGEMENT (35Q)

Examples

Example 1

On 1st February 20X1 Reliance Industries Limited requires a loan for Rs.1 crore for a period of 3 months. The Company entered into a Forward Rate Agreement with SBI on 1st of January 20X1 at 7% interest per annum for a nominal of Rs.1 crore repayable after 3 months effective from 1st February.

The actual rate of interest on 1st of February as per SBI is 8%. Compute the settlement amount.

Illustrations

1 Illustration

M/s. Parker & Co. is contemplating to borrow an amount of ₹ 60 crores for a Period of 3 months in the coming 6 months' time from now. The current rate of interest is 9% p.a., but it may go up in 6 months' time. The company wants to hedge itself against the likely increase in interest rate.

The Company's Bankers quoted an FRA (Forward Rate Agreement) at 9.30% p.a.

What will be the Final settlement amount, if the actual rate of interest after 6 months happens to be (i) 9.60% p.a. and (ii) 8.80% p.a.?

(ICAI SM, Sep-25 Similar 4M, RTP Nov'18, MTP Oct'22, MTP Mar'18, Old PM)

Solution :

Assumptions :

- 1) Ms. Parker & Co. entered into 6 × 9 FRA for INR 60 Crores notional @9.3% P.a
- 2) All the time periods are considered in months.
 - i) Settlement Date = 6 Months from today
Settlement value @ interest rate of 9.6% Reference rate.

Forward Agreed rate	9.3%
Notional	INR 60 Crores
Period of loan	3 Months
Loan settlement	6 Months
Reference Rate > Forward Rate	Long FRA Will gain

Settlement Value = Notional (Reference Rate - Forward Rate) × (Days to Maturity/Days in year) / (1 + Reference Rate × Days to maturity/Days in Year)

IN other Words, Settlement Value = $\frac{N (RR-FR) \times DTM / Dy}{1 + (RR \times \frac{DTM}{Dy})}$

$$= \frac{60 \text{ Cr} \times (9.6\% - 9.3\%) \times 3/12}{(1 + 9.6\% \times \frac{3}{12})} = 60 \times 0.075\% / 1 + 2.4\%$$

$$= 60,00,00,000 \times 0.00075 / 1.024 = \text{INR } 4,39,453.13.$$

This amount has to be paid by bank to Ms Parker & Co.

- ii) If reference rate is 8.8%, then FRA settlement value will be :

$$\frac{60 \text{ Cr} \times (8.8\% - 9.3\%) \times 3/12}{(1 + 8.8\% \times \frac{3}{12})} = 60 \times -0.5\% \times 0.25 / 1 + 2.2\%$$

$$= (750,000) / 1.022 = \text{INR } (7,33,855.19)$$

This amount will be paid by Ms Parker & Co to bank on settlement date as reference rate is lower than forward rate.

