

## Assignment – Chapter 12 – Interest Rate Risk Management

### Question 1

P Ltd. is planning to borrow an amount of ₹ 60 crores for a period of 3 months in the coming 6 month's time from now. The current rate of interest is 9% p.a., but it is likely to go up in 6 month's time. The company wants to hedge itself against the likely increase in interest rate.

You as CFO has been asked to suggest both traditional as well as modern methods to hedge interest rate risk.

Suppose the banker of P Ltd. has quoted the following Forward Rate Agreement (FRA) rates:

3 x 6	9.10%	9.15%
6 x 9	9.20%	9.30%
9 x 12	9.35%	9.45%

Based on the above information answer the following questions:

I. Suppose if P Ltd. agrees to adopt FRA method to hedge interest rate risk then the interest rate..... shall be applicable for the same agreement.

- (a) 9.10% p.a.
- (b) 9.30% p.a.
- (c) 9.35% p.a.
- (d) 9.45% p.a.

II. Suppose if the actual rate of interest after 6 months happens to be 9.60%, then the settlement amount approximately .....

- (a) ₹ 733,855 shall be paid by P Ltd. to its Banker.
- (b) ₹ 439,453 shall be paid by P Ltd. to its Banker.
- (c) ₹ 439,453 shall be paid by Banker to P Ltd.
- (d) ₹ 733,855 shall be paid by Banker to P Ltd.

III. Suppose if the actual rate of interest after 6 months happens to be 8.80%, then the settlement amount approximately .....

- (a) ₹ 733,855 shall be paid by P Ltd. to its Banker
- (b) ₹ 439,453 shall be paid by P Ltd. to its Banker.
- (c) ₹ 439,453 shall be paid by Banker to P Ltd.
- (d) ₹ 733,855 shall be paid by Banker to P Ltd.

IV. Which of the following technique is not the modern technique to hedge the interest rate risk .....

- (a) Interest Rate Futures
- (b) Interest Rate Options
- (c) Interest Rate Swaps
- (d) Forward Rate Agreement

### Question 2

B Bank Ltd. has entered into a plain vanilla swap through on Overnight Index Swap (OIS) on a principal of ₹ 10 crore and agreed to receive MIBOR overnight floating rate for a fixed payment on the principal. The swap was entered into on Monday, 10th July 2017 and was to commence on and from 11th July 2017 and run for a period of 7 days.

Respective MIBOR rates for Tuesday to Monday were:

8.75%, 9.15%, 9.12%, 8.95%, 8.98% and 9.15%.

If B Bank Ltd. received ₹ 4,170 net on settlement, calculate fixed rate and interest under both legs.

**Notes:**

- (i) Sunday is a holiday
- (ii) Work in rounded rupees and avoid decimal working
- (iii) Consider 365 days in a year.

**Question 3**

XY Ltd. is planning to expand its operations in view of growing demand for its products. For this purpose, it is considering to borrow an amount of ₹ 100 crores for a period of 3 months in the coming 6 months' time from now. The current rate of interest is 8% per annum but due to inflation 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 8.20% per annum.

You are required to calculate due to FRA:

- (i) The actual interest rate if the Banker pays to XY Ltd. an amount of ₹ 9,78,952.52.
- (ii) The actual interest rate if XY Ltd. will pay to the Banker a sum of ₹ 9,80,872.98.

**Question 4**

A manufacturer of electronic components has taken floating interest rate loan of ₹ 2 Crore on 1<sup>st</sup> April, 2023. The rate of interest at the inception of loan is 9% per annum. Interest is to be paid every year on 31<sup>st</sup> March.

In the month of October 2023, the Central Bank of the country releases the following projections about the interest rates likely to prevail in future.

- (i) On 31<sup>st</sup> March, 2024 – 9.25%
- On 31<sup>st</sup> March, 2025 – 9.50%
- On 31<sup>st</sup> March, 2026 – 10.00%
- On 31<sup>st</sup> March, 2027 – 9.00%
- On 31<sup>st</sup> March, 2028 – 8.25%

You are required to show how the borrower can hedge the risk using Option Cap arising out of expected rise in the rate of interest when he wants to peg his interest cost at 9% per annum.

(ii) Assume that the premium negotiated by both the parties is 0.80% to be paid at once on 1<sup>st</sup> October, 2023 and the actual rate of interest on the respective due dates happens to be as:

- On 31<sup>st</sup> March, 2024 – 9.50%
- On 31<sup>st</sup> March, 2025 – 11.00%
- On 31<sup>st</sup> March, 2026 – 9.25%
- On 31<sup>st</sup> March, 2027 – 9.00%
- On 31<sup>st</sup> March, 2028 – 8.50%

You are required to show how the settlement will be executed on the perspective interest due dates.